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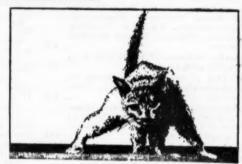
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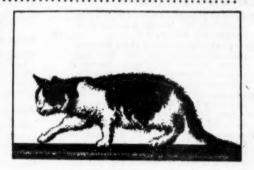
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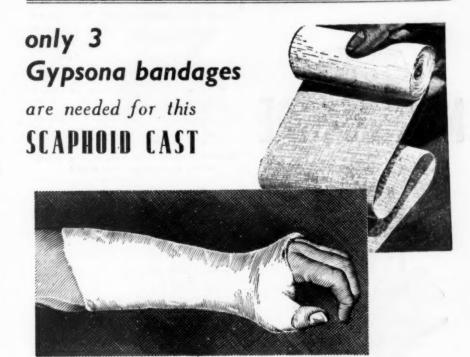
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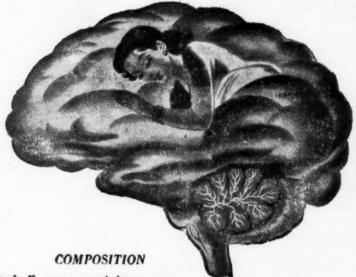




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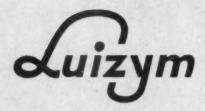
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Britton C. J. C. (1950): Practitioner, 164, 458

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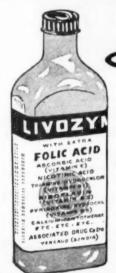
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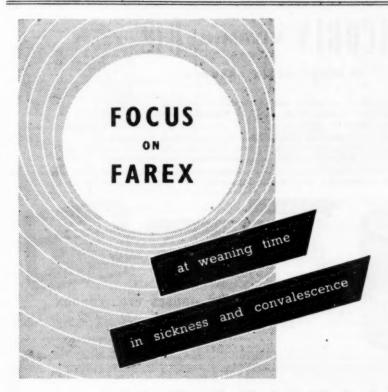
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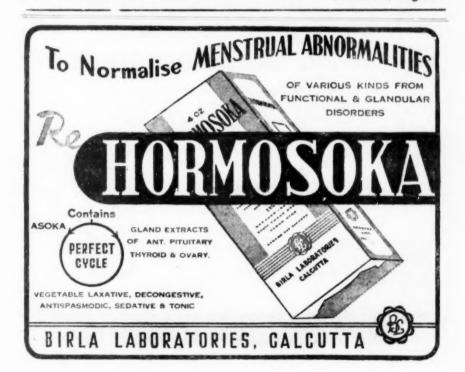
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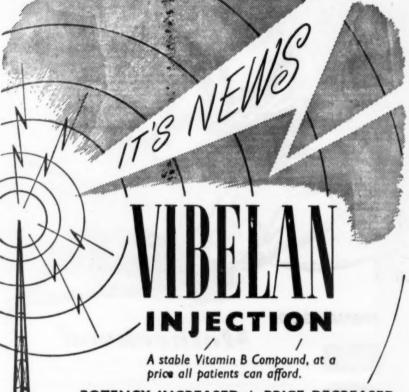


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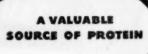
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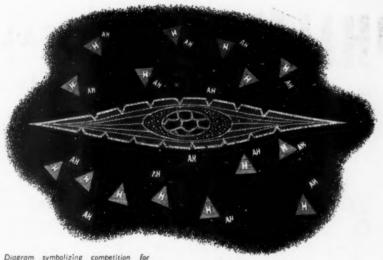


Diagram symbolizing competition for "shock-tissue" receptor sites by hist-amine (H) and an antihistaminic (AH).

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The clinical use of antihistaminics such as mepyramine maleate and promethazine hydrochloride for the symptomatic relief of allergic and anaphylactic conditions is based on the theory of histamine-release.

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The antihistaminics are not believed to prevent the antigen-antibody reaction in the "shock-tissue", nor to destroy the histamine thereby released, but it is thought that in some unknown manner, perhaps by competing for and occupying or blocking the receptor-sites in the "shock-tissues", they prevent tissue damage by histamine.

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Vol. 50

JUNE, 1953

No.

#### Original Articles

### PROLAPSE\*

INDRANATH SOBTI, B.sc.. M.S., F.C.F.S.,
Chief Medical Officer, Bhartia Hospital, Fatchpur, Dt. Sikar, Rajaethan.

DROLAPSE is a common complaint but severe cases mostly occur at the menopausal age in women who have borne many children. No treatment that does not attempt to restore the normal anatomical relation of the uterus with its supports would naturally succeed.

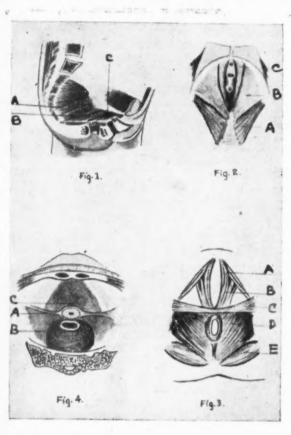
Supports of the uterus.—The pelvic floor:—This is formed by the levator ani muscles on either side. This muscle consists of three parts viz., pubococcygeus, ilio-coccygeus, and ischio-coccygeus. The ischio-coccygeus (coccygeus) arises from the spine of the ischium and spreads out in a fan shaped manner to be inserted in the front part of the coccyx. The ilio-coccygeus arises from the lateral wall of the pelvis (white line), passes backwards and inwards to be inserted into the tip of the cocovx and the raphe between the rectum and the coccyx. (Fig. 1). The pubo-coccygeus arises from the back of the pubis and passes backwards to be inserted into the tip of the coccyx via the raphe between the rectum and the coccyx. and into the muscle coat of the rectum (Fig. 2). The innermost fibres of the pubo-coccygeus are very important as they decussate between the vagina and the rectum. When these fibres are well developed and are intact, the urogenital hiatus is small, but when these fibres are torn during child-birth, the urogenital hiatus becomes patulous.

The muscles of the perineum:—These consist of the transverse muscles of the perineum, ischio-cavernous, and bulbo-spongiosus.

which, along with the two layers of the triangular ligament offer some support to the vaginal wall. (Fig. 3).

The ligaments of the uterus: -The round ligaments and the broad ligaments do not support the uterus. The pelvic cellular

which is thickened and strengthened various places does offer some support to uterus along with the pelvic floor. The cellular tissue is thickened and condensed around the vagina and cervix and also take the form of fan-shaped extensions on either side of these structures, the so-called ligaments of the uterus. The most important of these is known as Mackenrodt's ligament. It passes laterally from the vagina and the cervix. Its posterior part is known as the utero-sacral ligament. (Fig. 4). Anteriorly fibres of the same sysrine ligament, fix in turn is support-



tem, vesico uterine ligament, fix C—Pubo-coceygeus. Fig. 1. A—Ischio-coceygeus. B—Ilic-coceygeus. C—Pubo-coceygeus. Fig. 2. A—Ischio-coceygeus. B—Ilic-coceygeus. C—Pubo-coceygeus. Fig. 3. A—Ischio-coceygeus. B—Ilic-coceygeus. C—Pubo-coceygeus. Fig. 3. A—Ischio-coceygeus. B—Ilic-coceygeus. C—Pubo-coceygeus. B—Ilic-coceygeus. C—Pubo-coceygeus. B—Ilic-coceygeus. C—Pubo-coceygeus. B—Ilic-coceygeus. C—Pubo-coceygeus. B—Ilic-coceygeus. C—Pubo-coceygeus. B—Ilic-coceygeus. B—Ilic-coceygeus. C—Pubo-coceygeus. B—Ilic-coceygeus. B—Ilic-coc

ed by its own ligaments. Thus the pelvic floor and the pelvic cellular tissue keep the uterus in its mid-pelvic position, and these along with the perineal muscles support the vagina.

AETIOLOGY:—There are many causes for prolapse and usually in a well established case more than one ætiological factor is present. The most important causes are injury during child-birth,

asthenic states and overwork. At the menopausal age the tissues become slack and any tendency to prolapse increases. To these causes may be added other contributory factors like chronic cough, large abdominal tumour, constipation, a heavy subinvoluted uterus, and a heavy cervix due to chronic cervicitis.

Types of prolapse.—There are many types of prolapse, but it must be realised that it is rare to find a prolapse definitely limited to one and one structure only. Usually the slackness is generalized but the part most affected determines the type.

Cystocele:—The anterior vaginal wall prolapses and carries the bladder with it. The lower part of the anterior vaginal wall usually escapes as this region is further supported by fascial tissue to the back of the pubis.

Urethrocele:—The lower part of the anterior vaginal wall in the region of the urethra is more firmly supported as mentioned above and hence urethrocele is rare. When it does occur it causes imperfect control over micturition.

Prolapse of the uterus:—Different degrees of prolapse of the uterus have been described. These are stages of the same process and need the same perfect treatment. When the cervix is protruded outside the vulva it gets elongated and thickened due to venous stasis, and its epithelium gets thickened. Trophic ulcers may develop on the surface. When the whole of the uterus protrudes outside the vulva carrying with it both the vaginal walls, it is called complete procidentia.

Prolapse of the posterior vaginal wall:—It is not so common as cystocele. The utero-sacral ligaments support the posterior vaginal wall more perfectly. It is usually found in association with a marked injury to the perineal body.

Rectocele:—The posterior vaginal wall is very loosely attached to the rectum which can only prolapse if it is adherent to the posterior vaginal wall by scar tissue. It is not very common.

SYMPTOMS:—Symptoms vary according to the type and the degree of the prolapse. The patient may complain of a sense of weakness in the perineum, backache, or something descending in the vagina. The external swelling may cause inconvenience. She may be worried about the urinary symptoms like imperfect control over micturition, difficulty in emptying the bladder, frequency of micturition etc.

TREATMENT:—This varies according to circumstances, and must be carefully planned to suit individual requirements.

A young woman with some degree of prolapse after delivery:—Conservative treatment consisting of good sleep, open air life, freedom from anxieties, massage, abdominal and perineal exercises, riding, etc. should be prescribed. Astringent douches may be given, if there is some leucorrhœa.

A young woman with a moderately severe degree of prolapse and urinary symptoms following delivery.—Operation must be advised in such cases. It is not reasonable to tell them that they should lead a pessary life permanently. No doubt there are chances that a subsequent operation may be required for a further injury in a subsequent delivery but these are remote possibilities, as such deliveries are less liable to be difficult or complicated.

A woman at or about the menopausal age:—Operations that aim at repairing the supports of the uterus and reducing the dimensions of the urogenital hiatus are eminently successful, and should be always advised, unless contraindicated owing to some general diseases.

An old frail woman:—Such patients cannot stand an operation of any magnitude. Pessaries should be prescribed. There are many types of pessaries, viz., the ring pessary, the Hodge's pessary, the cup and stem pessary etc. The ring pessary when properly adjusted lies horizantally on the pelvic floor and by stretching the vaginal walls takes up the slack. The patient gets a feeling of support. A cradle pessary like Thomas or Hodge's is useful when the uterus is retroflexed but can be replaced back. When the urogenital hiatus is much relaxed or the prolapse is of an extreme degree the ordinary ring pessary may not be retained by the patient. In such cases a cup and stem pessary is useful. When pessaries are used the vagina should be kept clean by douching daily with astringent lotions.

OPERATIVE TREATMENT:—Many operations have been described but only those that can bring about the normal relationship between the uterus and its supports can succeed. Our main object is to reduce the dimensions of the urogenital hiatus by accurate suturing of the pelvic floor, both in front and behind the cervix and replacing the uterus back in its natural position. The cervix may be amputated if it is hypertrophied and elongated.

Another method of operation:—Mayo's operation, consists of vaginal hysterectomy after which the cut edges of the Mackenrodt's ligaments, broad ligaments, utero-sacral ligaments, round ligaments, ovarian ligaments, and fallopian tubes are sutured to the corresponding structures on the opposite side to form the support of the bladder. At the end of the operation an extensive colpoperineorrhaphy is performed. It is felt that it is mainly the colpoperineorrhaphy and the stitching together of the Mackenrodt's ligaments that form the important part of the operation. Hysterectomy per se, does not appear to bring about the cure. It is the repair of the pelvic floor that is important. Moreover, a prolapse after a hysterectomy is very difficult to cure.

Some workers perform anterior colporrhaphy, colpo-perineorrhaphy and then perform ventrifixation. If the prolapse is of a severe degree, a hernia of the pouch of Douglas may appear, which is very difficult to cure surgically.

In Le Fort's operation a strip about half an inch wide is excised from the anterior and the posterior vaginal wall in the midline throughout the depth of the vagina, and the two raw areas are sutured together forming a raphe which supports the uterus. The channels on either side provide an exit for the natural secretions. This type of operation is suitable only for very old women who cannot stand the more elaborate operation.

AFFER-TREATMENT:—Opiates are given for the first 3 days, Bowels are confined for 3 days and then opened by giving liquid paraffin at night and an olive oil enema the next morning. The vagina is packed after the operation and this packing is removed after 24 hours. The patients should be in bed till the wounds heal completely.

Complications.—Retention of urine:—Avoid passing a catheter as far as possible. Some urinary antiseptic as a routine is advantageous.

Haemorrhage:—This may be either reactionary or secondary. Hot antiseptic douching of the vagina should be done as early as possible after removing the clots. Rarely, repacking may be necessary.

Suppuration of the wound:—Antiseptic douching should be carried out preferably twice a day.

White leg and thrombophlebitis of the veins of the leg should be treated on general lines. Fatal pulmonary embolism is a rare complication.

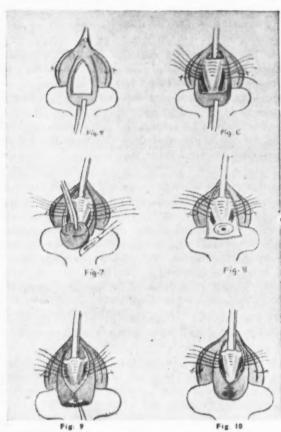
Report of a case.—A Muslim woman, named S., aged 20 years was admitted in Seth J. P. Bhartia Hospital, Fatehpur, Rajasthan, on 11-8-'51, for prolapse of uterus since 1½ years. It had developed gradually after her second child was born.

Examination:—The cervix was considerably elongated and roughened. It protruded outside the vulva in the lying position. On the slightest straining the whole uterus came out and remained out, till manually replaced. The patient was otherwise well-built and healthy.

Preoperative treatment:—She was given iron in the form of Blaud's pill for a week. The vagina was douched with Dettol and painted with acriflavine on 2 consecutive days before operation. A simple enema was given on the morning of the operation and an injection of morphine gr. ½ with atropine gr. 1/100 was given half an hour before the operation.

Operation:—She was operated on 21-8-'51, under spinal anæsthesia. The operation area was painted with Tr. of iodine and towels arranged in the usual way. An Auvards speculum was placed in the vagina. Each labium minus was retracted laterally as far as

possible and stitched to the skin over the towel with a single stitch. The cervix was grasped with a volsellum forceps and pulled down.

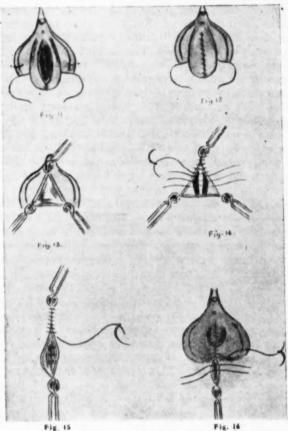


A triangular flap was excised from theanterior vaginal wall with its apex just below the urethral opening and its base a little above the cervix. (Fig 5). This flap was about 11 inches wide near its base and about 3 inches high. The bladder was pushed up and some connective tissue fibres connecting the bladder with the (vesicocervix uterine ligament) were cut to complete the mobilisation of the bladder. After the bladder was well pushed up, the medial edges pubo-coceygeus muscle along with a portion of

the parametrium was brought in view. Five sutures of No. 2 chromic catgut taking a good bite of tissue about half an inch from the free border of the pubococcygeus were passed but not tied. (Fig. 6). The free ends were held in artery forceps. There was free bleeding and some bleeding points were ligatured. A hot moist sponge was placed in the raw area between the sutures and held in place by pulling up the volsellum forceps holding the cervix. An incision was now made behind the cervix joining the two angles and the vaginal wall separated for some distance from the posterior and lateral sides of the cervix. (Fig. 7). About  $1\frac{1}{2}$  inch of the cervix was amputated (Fig. 8) and the stump was caught in a volsellum forceps. The cervical vessels on either side of the cervix were transfixed and ligatured. The raw surface of the cervix was was completely covered as follows:—The lateral angles of the cut

anterior vaginal wall were brought together in front of the cervix,

stitched together with No. 1 chromic catgut and the ends left long. This was then pulled down for about a quarter of an inch and the adjoining anterior vaginal wall borders for about 3/4 of an inch were stitched together and anchored to the front of the remains of the The cervix. cervix was now surrounded by a frill of the vaginal wall. (Fig. 9). One of the ends of the catgut that was long was now threaded on a needle which was passed in the cervical canal and brought out



in front of the cervix, a little to one side. The other end was similarly threaded and brought out a little to the other side. The two ends were now tied together. The whole of this frilllike margin was similarly stitched just inside the cervical canal by a series of radiating catgut stitches. (Fig. 10). There was some difficulty as the cervical canal was not previously dilated. protruding part of the cervix was now pushed up and the sutures previously passed through the pubo-coccygeus were tied, (Fig. 11) the bladder and the urethra being carefully kept pushed up by a blunt instrument all the time. The free borders of the anterior vaginal wall were brought together by a continuous cat-gut suture. (Fig. 12). The posterior vaginal wall was caught by tissue forceps in three places viz. a little behind the reconstituted cervix (as near the cervix as possible after it was pushed up), and a little behind the labia minora. The triangular area enclosed by these forceps

was put on a stretch and excised. (Fig. 13). The rectum was then separated from the vagina and pushed upwards and backwards with a finger. The inner fibres of the levator ani muscles were identified. Three deep sutures of No. I chromic catgut were passed through the free margin of this muscle and the adjoining connective tissue. but not tied. (Fig. 14). The skin at the middle of the base of the triangular raw area was caught in a tissue forceps and put on the stretch. A continuous suture of catgut starting at the cervical end was passed through the cut margins of the posterior vaginal wall for about an inch and a half, but not tied. The deep sutures through the levator ani were now tied (Fig. 15) and then the continuous stitch mentioned above was tied and the end left long. A few more sutures were tied joining the transverse muscles of the perineum and some connective tissue. (Fig. 16). Finally the perineal wound was stitched by the long end of catgut left after stitching the upper part of the posterior vaginal wall as mentioned above. The vagina was packed with sterile gauze. Throughout the operation there was quite free bleeding. Some bleeding points were ligatured but there was considerable oozing for which hot moist sponges were used. Procaine penicillin powder was applied on the raw surfaces before closing. Only chromic catgut was used for suturing.

Post-operative treatment:—On the first day she was given Coagulen (Ciba) 5 cc. morphine gr. \(^1/4\) at 8 hourly intervals, 100 cc. of 25% glucose saline and one dose of procaine penicillin. Urine had to be drawn by a catheter. The next day the vaginal pack was removed; glucose and penicillin continued and 500 mg. of vitamin C, sulphadiazine, and alkaline mixture added. Morphine gr. \(^1/4\) was given at bed time. On the third day, the morphine injection at night was replaced by 2 ounces of liquid paraffin at bed time. Bowels were opened on the 4th day with 4 ounces of glycerine enema, and all else was continued as on the second day. Sulphadiazine, penicillin, vitamin C, and an alkaline mixture were continued on the 4th, 5th, 6th and 7th days. The patient was discharged on the 12th day after the operation. The wounds in the vagina had all completely healed up.

Summary.—The anatomy of the pelvic floor, supports of the uterus, and the various factors that cause prolapse, the different methods of treatment suitable for individual cases have all been discussed. Of the operative methods of treatment the one that aims at reducing the dimensions of the urogenital hiatus by suturing together the levator ani muscles both in front and behind the cervix along with the parametrium has been commended. Colpoperineorrhaphy is an integral part of this operation. The cervix may be amputated if it is elongated and hypertrophied. A case of complete prolapse of the uterus with elongation of the cervix has been described and the several steps in the operative procedure

have been set forth in detail.

#### DISCIFORM DEGENERATION OF MACULA\*

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Nomenclature.-The honour of earliest christening of this disease goes to Pagenstetcher who in 1875 first described it as choroidio-retinitis in regione maculæ lutea. After him till 1905, it enjoyed several other nom de plumes such as senile macular changes in arteriosclerosis, tumour-like swelling at the macula and senile macular exudative retinitis. But in 1905, Oeller 2 not satisfied with these rather expressive expressions, evolved the title. Degeneration Maculæ Lutra Disciformis. Since then this term has stuck to this condition and remained so. However in 1926, Junius and Kuhunt were the first to establish its identity as a definite disease entity in their published exhaustive monograph. In fact whenever the condition can be demonstrated, it is rather fashionable or may be more scholarly to describe it as a "Kuhunt-Junius." The real godfather poor Dr. Oellor simply sinking in the background! Drs. Verhæff and Grossman4 in their very interesting and detailed paper. present an analysis of 84 such cases. The bilaterality of the affection is pointed out.

Description.—Disciform degeneration of the macula is a condition, frequently bilateral, characterised ultimately by the development of a localised mass of organised tissue situated underneath the retina. It may have a complete composite ætiology but the one proved cause is the occurrence of hæmorrhage from the chorio-capillaris extravasating between Bruch's membrane and the pigment epithelium. The condition is usually divided into two classes: (1) Senile, in which the hæmorrhage is due to sclerotic changes in the choroid; and (2) juvenile in which the etiology of hæmorrhage is obscure.

Analysis .- (According to Verhoeff). Race :- All Whites.

Frequency:—Only 129 cases have been recorded but it is believed that it is common, since the literature merely represents a fraction of the total number.

Age: - Average 68 years.

Sex: - More in females, ratio being 10:7.

Trauma and inflammation:—There has been no evidence.

General condition: —Majority have arterial diseases which may be associated with hypertension, cardiac involvement, diabetes, renal affections and occasionally syphilis may be an added feather in the cap.

Eye affected: -21 cases in whom the condition was bilateral, the right eye was the first affected in 12 and in 39 cases which were unilateral the right eye was affected in 18.

Clinical symptoms.—There is a tremendous impairment and more often than not a total obscuration of central vision with occasionally a positive scotoma which is central. As regards the onset, one cannot be sure whether it was gradual or sudden, since the patients are first observed when the lesion has far advanced. However, many cases have been described with an onset rather sudden, where a subretinal hæmorrhage was observed at the first examination. In others the premonitory symptoms, of metamorphopsia, photopsia and loss of visual acuity were noted. The gradual loss of vision may be attributed to the preliminary sclerotic changes The vision or more accurately the loss of vision at the macula. remains in a condition of status quo, irrespective of the progress of the disease. Going back three fourths of a century when Pagenstetcher had his first case, he found glaucoma associated with it. But this glaucoma was secondary to an adherent leukoma and on Verhoeff's analysis, no rise of intraocular tension has been recorded.

Ophthalmoscopic signs.—These would depend upon the stage. the patient is seen. In early stages there is subretinal hæmorrhage at the macula elevating the retina in the form of a mound. Associated with this, the surrounding fundus may be peppered with other hæmorrhagic spots. A little remote ones are described as retinal and these are evanescent. In later stages one less frequently notes a hæmorrhage. The retinal mound is always at the macula, within the region of the superior and inferior temporal retinal vessels. The colour is greyish, greenish or almost black, which later on becomes white except for some pigmented spots here and there. The size of the mound varies from half to several times the disc diameter. The height is considerable and in one case reaching upto 6 diopters. It is usually more elevated early in the disease and diminishing in the later stages. This mound has a distinct margin and a sharply circumscribed mass. It may assume however other contours. In some cases it was found to be dimpled over the hypothetic macula. retinal vessels are always visible and occasional arteriovenous communication was marked. The associated fundus changes for matter of simplification can be better divided into those seen in the affected eye and those observed in the as-yet unaffected eye in cases of unilateral involvement.

In the unaffected eye, senile macular changes which are precursors to the development of the disciform lesion may be demonstrated. Drusens and pigmentary changes are rare. There are white spots in the papillomacular area and these are of degenerative and exudative character and may be so numerous, as may lead one to identify the condition as a circinate degeneration which may incidentally be associated with the disease in question, or may precede or follow it, or may even co-exist.

In the affected eye all these changes together with the disciform mound and some occasional sclerotic arteriolar changes are found.

It is of interest to note that in certain cases angiod streaks were present in the other eye.

PATHOLOGY:—The exact nature of the pathological changes in the affected eyes can be most adequately studied from the series of Verhæff's cases of which 13 eyes were examined microscopically. One eye was removed for glaucoma, four for suspected tumour and eight for post mortem examination. The morbid appearance of the various structures can be described in the following sequence.

The mound:—This chiefly consists of proliferated pigmented epithelium cells and fibrous tissue, There may be found some elastic fibres derived from lamina vitrea. Small amounts of blood and albuminous exudates in various stages of organisation, and choroidal vessels are also observed in the mound with an occasional twig of a capillary from the retina, the former from the break in the membrane of Bruch. In later stages one may expect a hyaline degeneration with cartilage formation and occasional ossification.

Retina:—Over the mass the retina shows local degenerative changes as also atrophy which seem to be secondary.

Pigment epithelium:—There is marked proliferation and it forms an important component of the mound.

Choroid:—Apart from the occasional cellular and exudative accumulation, there are general sclerotic changes. It is normal in other respects.

PATHOGENESIS:—Here we come across a fight as it were, amongst the giants of ophthalmology. Many causes have been attributed by various observers. The retina, lamina vitrea, blood vessels of the retina, and inflammatory conditions of various tissues have all been brought before the jury and the judge as it were, but the verdict it seems has gone against the choroid. Sclerotic changes in the choroidal vessels disturb the nutritional phase with resultant hyperplasia.

Juvenile disciform degeneration of the macula.— Condition similar to the above-described senile degeneration has been reported to have been observed in the second and third decades of life. The chief and very welcome feature of differentiation between the two, is that the lesion in the juvenile type lends itself to healing, leaving few if any changes and perhaps even an unscathed vision. Junius in 1929 again reported four cases of this type. The ophthalmoscopic appearances are similar. Complete healing may occur in from two to six months. Since this condition would never call for an enucleation of the eye for pathological study, the lesion is assumed to be due to a vascular disturbance in the chorio-capillaries which causes extravasation between the pigment epithelium and lamina vitrea. The cause is of course obscure yet. Verhæff described 3 cases of his own, where in the third case, that of a man 68 years of age,

though the ophthalmoscopic picture was typical, he lost very little vision. On pathological examination of the eye, it was found that only serum exudate was present sub-retinally instead of hæmorrhage. Thus one is led to hypothesise that there are intermediate forms of the disease which occur between the senile and juvenile types.

DIFFERENTIAL DIAGNOSIS:—It is important to differentiate between disciform degeneration and malignant melanoma, conglomerate tubercle and exudative retinitis of Coats. The melanoma can be ruled out by the presence of the typical signs of the disciform degeneration and the absence of retinal detachment, as well as signs of inflammation. The exudative retinitis of Coats occurs in young persons and is rarely confined to the central area. Many a time, the difference is impossible to verify in the absence of subretinal hæmorrhages which are associated with disciform degeneration. Anyway it rarely matters since the specific diagnosis could make no difference to the conduction of the case. tubercle on the other hand, will have softer edges and associated inflammatory evidence. There will be systemic symptoms and a rapid course. There is no treatment for the condition. In a doubtful case of malignant melanoma of the choroid, enucleation is generally planned, but Verhoeff and Maxwell 5 feel that it should be delayed until the possibility of a disciform degeneration is ruled out.

Case Report:—P.Z., Case No. HP/808-P, aged 54 years, a Hindu lady consulted me for dimness of vision in the left eye.

History:—Since last four years she has been gradually losing vision in her left eye. She had never been to an ophthalmologist and she came for the first time for her eye examination. This also because she feels, she is gradually losing vision in the right eye too. There has been no pain in the eye, nor any cephalalgias. She does not have any professional vocation. There is no special family history.

Examination:—Vision OD: Finger counting at 16 feet. OS: Uncertain finger counting at 1 foot, Eccentric fixation. The external eye demonstrated no abnormality. Intraocular tension in each eye was 17/Schitz with 10 gms. The media were clear except for some vitreous opacities in both eyes. The reaction to light was normal in each type. There was no anisocoria.

Funduscopy:—OD: Normal disc with normal vascular tree. The macular region in this eye was normal except for a few white spots, which looked exudative, scattered here and there. The fundus was tessellated.

The error of refraction was low myopia, which alone could not account for the poor vision in this eye. Possibly the central area was getting degenerated as evidenced by the scatteredwhite spots.

OS. The nerve head was normal. There was a characteristic mound at the macular area about three disc diameters, white in colour and about two diopters in height. There was pigment scattered in spots over the white area of the mound. There was no other intraocular pathology as evidenced through the ophthalmoscope. The vascular tree was normal. The vitreous in this eye also had floaters.

Laboratory tests:—Urinalysis showed no abnormality, nor any evidence of renal damage. Serological test: Kahn precipitation reaction was negative.

Comment.—The vision in the affected eye with the characteristic signs of a disciform degeneration is naturally insignificant. The poor vision in the right eye which as yet does not show the typical changes of the condition, is most probably due to the gradual setting in of the disease, as evidenced by the degenerative and exudative character of the white spots near the macula. The low myopic error of refraction can per se he hardly responsible for this reduced central acuity of vision.

Uptodate there have been no cases of senile disciform degeneration of macula reported from India, though Falcone<sup>6</sup> reported a case of juvenile disciform degeneration of the macula.

Summary.—A review of the condition of disciform degenerarion of the macula is presented with an analysis. The disease is described in detail with the various clinical symptoms, ophthalmoscopic signs, pathology, pathogenesis and differential diagnosis. A case report, possibly the first from India is given.

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#### Anosmia

Peripheral or central disturbances can give rise to loss of the sense of smell. The commoner respiratory form is met with in some cases of rhinitis, rhino-sinusitis, nasal allergy and polyposis, adenoid hypertrophy, and sometimes as a result of prolonged use of nasal drops containing tyrothricin. Partial loss of smell may result from excessive smoking and continuous inhalation of irritating fumes. The clinical course of anosmia arising from cerebral tumours or cerebral syphilis may follow the same pattern as the basic conditions themselves. Strychnine in full dosage may sometimes help when other measures have failed.—(J.A.M.A., 146, p. 298, 1951).

## RABIES\*

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HYDROPHOBIA, though its incidence is small, is a dreadful disease and its results so terrible that it needs to be thoroughly understood in order that preventative measures may be adopted.

The special preventative treatment is comparatively long and uncomfortable, therefore the unnecessary use of it is more trouble-some than in many other diseases.

In order to determine whether or not a person who has been bitten needs a course of antirabic treatment, it is necessary to be able to diagnose correctly the presence or absence of rabies in the animal, and to know the chances in cases that may be called suspicious.

SYMPTOMS IN THE DOG:—There may be slight fever. The first thing noted may be a change in character. A non-affectionate dog suddenly becomes affectionate. The increase in affection may show itself in more frequent attempts to lick the hands and face of the owner. At this stage the saliva may be virulent, and we should beware of unusual playfulness, especially if it is known that the dog has been bitten.

Appetite is variable and may be abnormal. Unnatural activity may gradually become more marked during from two to four days.

The animal may appear to have hallucinations, such as seeing imaginary flies and fearing inoffensive objects. He appears nervous and may start at the sudden unfolding or rustling of a newspaper. Later he loses fear and begins to bite at things and animals, especially other dogs, and lastly man. He may run from home at this stage, in fact this is often the first symptom noted by an observant owner. He may return exhausted and be quieter for some time. He may even seem normal again-he may recognise his master, respond to caresses and eat and sleep well. Then he again becomes excited. If under restraint in a cage, on chain, or in room, he may bite and tear things. His bark early becomes characteristically altered in pitch and mode. It is described as changing from a succession of resonant sharp barks to a low howl followed by an irregular series of low-pitched barks between open jaws. But some dogs do not bark characteristically, and some do not bark more than usual.

The majority do not fear water, they drink as long as they are able to, that is until spasms become marked in the muscles of swallowing. The saliva drips, but the animal may not "froth at the mouth."

The first stage passes insensibly into the second. Sign of weakness in certain muscles appear, often in the hind legs, but sometimes

in the front legs or the jaws. Spasms and twitchings gradually become less, paralysis increases and the dog dies.

The duration of the obvious symptoms is usually from four to six days, not uncommonly eight days—practically never over ten days. The first stage is from three to four, and the stage of paralysis from one to two days.

Dumb rabias.—Fifteen to 20% of the cases of rabies among dogs occur in this form. The first stage of excitation may be so short as to pass unnoticed. Paralysis may be the first symptom observed, frequently in the lower jaw, causing "Drop jaw", which makes the owner think that his dog has a bone in the throat. The animal does not bite anyone when suffering from this type of disease, but its saliva may be as poisonous as that of a biting animal, and will cause hydrophobia if it comes in contact with a recent wound, even a hang-nail. The hind legs quickly become paralysed. Paralytic rabies is said to be a more intense form of the disease and often lasts longer.

SYMPTOMS IN MAN:—The psychic and reflex symptoms which are usually the first to appear are like those following any excitant causing hypersensitiveness of the nerve cells. The first thing noticed may be a local irritation in the wound, a tingling and itching with some engorgement and pain.

Sometimes there is a sensation of constriction in the throat or of stiffness in walking or breathing, or a sensation of anxiety and tenseness. There usually is a slight rise in temperature (100°F). In 48 hours the stiffness extends to the throat, and pain in the muscles there makes the patient fear to swallow and as he avoids drinking water he soon becomes thirsty. To avoid swallowing his saliva he may keep constantly spitting about him. There is a characteristic pharyngeal spasm on exposure to a draught of air. Loud speaking or a sudden sound will set off a convulsion. Remissions which give the relations and friends short hope of recovery may occur now, but soon the spasms return, there may be hallucinations and even mania but there is seldom any intention to injure others. The mind is clear between attacks. The voice becomes hoarse with a peculiar quality. There may be nystagmus and squint with photophobia.

Vomiting is a frequent symptom and the vomit may be dark-coloured as a result of hæmorrhage or regurgitation of bile. Death may occur suddenly from apoplexy or asphyxia, but usually he passes into the paralytic stage—the tense muscles relax, the jaw drops, ropy saliva flows, the face becomes smooth and expressionless, coma supervenes, breathing becomes irregular and feeble and finally stops. The temperature may shoot up high towards the end.

Dumb rabies in man are cases which show degenerative changes from the commencement. They are less recognised, the

convulsive stage being shortened or absent. The limbs feel heavy and numb, they become quickly ataxic and paralysed in from two to eight days. Consciousness is retained till the end.

Rabies is essentially a disease of mammals though all warm blooded animals under favourable conditions may be affected. The dog is most frequently attacked probably because he wanders more at large. In countries where there are wolves these stand next to the dog in frequency. Cattle stand a greater chance of being bitten by mad dogs. Possibly more cats are affected than is known, since cats often develop the paralytic (dumb) form and the disease may not be recognised.

The earliest reference to Rabies is made by Aristotle 300 B.c. In India it is mentioned in Hindu mythology in the Vedic period. In Atharva Veda, Yama the god of Death, is described as being attended by dogs, his constant companions and emissaries of death "Broad nosed and brown the messengers of Yama, greedy of lives, wander among the people" (I.M.G., Oct. 1950). In 1714 the paralytic form was noted in dogs, and in 1753 in human beings. In 1821 Magendi and Brischet stated that they transmitted the disease from man to dog by saliva. The most brilliant series of experiments to prove the entity of Rabies was carried out by Pasteur in 1884. He described minute granules (called Negri bodies in 1903) in nerve tissue which he thought might be the specific organisms, but no growth could be obtained in vitro. Negri bodies are now known to be the cause of Rabies and to be protozoal in nature (Williams and Lowden—1906).

The best method of disinfecting rooms and clothing is the use of boiling water or Formalin '08% for two hours.

TREATMENT: is essentially one of prophylaxis by means of a specific vaccine. Until recently serum played a very small part and drugs none at all, except in alleviating the symptoms of the developed disease.

The wound should be cleaned immediately with any fluid antiseptic and then cauterised with fuming Nitric Acid or Carbolic Acid. Silver Nitrate and Iodine are useless for this purpose.

If we could determine easily in each case the presence of rabies in the source of infection, treatment would be a matter of course. Unfortunately there are several factors which interfere with an immediate and accurate decision being made. The animal that inflicted the bite, may have disappeared, or it may be apparently healthy, or may have indefinite symptoms, or it may have been killed before any data could be obtained, or it might have been sent to the laboratory without a history, or in too bad a condition to be suitable for microscopic examination. If rabies cannot be ruled out on account of any of the above factors, anti-rabic treatment should be advised.

If an apparently healthy animal should bite a person, the animal should be kept under observation for at least three weeks, and treatment begun if suspicious symptoms appear or become progressive. When a case has been exposed only to the saliva of an animal, treatment should be advised unless the presence at the time of fresh cuts or abrasions can be satisfactorily ruled out altogether. The slightest fresh abrasion may be more dangerous than deeper cleancut wounds which bleed freely—such abrasions are more frequently overlooked.

Immunity produced by antirabic treatment lasts for a variable period of time. It may not last for more than fourteen months.

Hydrophobia-phobia is not uncommon. The Indian Medical Gazette, (Oct. 1950) mentions two cases which might have been amusing had they not been so real and tragic. "An educated wellto do gentleman aged 35, recently came to Kasauli, after having put through five long-distance telephone calls within two days, to ask if he should be treated because a dog in the street had brushed against him; saliva may have been left on his trousers, he may have contaminated his hand with the saliva, and shortly after the dog had touched him he sucked a lozenge without having first washed his hands. There was no particular reason to suspect that the dog was rabid; it had not attempted to bite him or any one else on the road at the time, yet this patient worried so much that a doctor (not at Kasauli) was induced to give him antirabic treatment. few weeks after the patient came back to the Institute at Kasauli demanding further treatment because, according to him, the doctor may have used the same iodine swab on him as was used on another person getting prophylactic injections and he feared that this person may have been developing hydrophobia."

#### Otitis Externa and its Treatment with a New Antibiotic

This common external ear canal infection is most commonly due to Pseudomonas aeruginosa. Fungi play a minor role. 80 such cases were treated by Graves of Indianopolis, with a new preparation containing polymixin and bacitracin bearing the trade name Polycin. This antibiotic cintment does not pack or plug the ear canal and can easily be washed out. It has the further advantage of providing a pH of approximately 5.0 when put into solution. This latter point has been stressed by several authors as a very important part of the treatment of citis externa. No sensitivity resulted and no untoward effects were observed.—(Eye, Ear, Nose and Throat Monthly, 31, 1952, Abst. by author for Q. Rev. Surg. Obst. Gynaec., Sep. 1952).

# RECENT ADVANCES IN THE DRUG THERAPY OF ACUTE CORONARY DISEASE\*

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INTRA-VASCULAR clotting may occur in both surgical and medical conditions. The prevention or limitation of such thrombosis by means of anti-coagulants has been studied recently.

Even as early as 1938, Solandt and Best found that coronary thrombosis produced in experimental animals could be prevented by Heparin. Wright in 1948 published his preliminary report on the therapeutic value of anti-coagulants in coronary thrombosis and since then evidence has steadily accumulated regarding the usefulness of the drugs in coronary occlusion.

In dealing with acute coronary diseases we have to recognise two different clinical entities:—(1) Coronary occlusion; and (2) Coronary insufficiency. The treatment of the two conditions is different (Master, 1949).

Coronary occlusion is sudden complete closure of coronary arteries due to thrombosis and this produces myocardial infarction. The drugs that have been found useful in this condition are Heparin and Dicumarol.

In coronary thrombosis these drugs have been used because :-

- (1) They prevent extension and recurrence of thrombosis within a short space of time.
- (2) They have in addition to anti-coagulant effect a direct vaso-dilator effect also on the coronary vessels (Gilbert, Fenn, Nalefski, 1948).
- (3) They prevent intraventricular mural clot-formation with danger of subsequent embolism.
- (4) They are of especial value in preventing thrombo-embolic complications.

Anti-coagulant therapy should be undertaken only in an institution or hospital where the patient can be kept under close clinical observation for signs of over-dosage, (purpura, microscopic hæmaturia etc.) and at the same time daily estimations of prothrombin level and blood coagulation time can be done. Anti-coagulant therapy is contraindicated in kidney or liver damage. Regarding the relative merits of Heparin and Dicumarol the action of the former is instantaneous and that of the latter takes 30–48 hours before the prothrombin level is reduced sufficiently to prevent intravascular clotting.

There are different schedules of treatment in coronary thrombosis. Either Heparin, or Dicumarol alone can be given or they may be combined. Dicumarol:—Dicumarol depresses the formation of prothrombin by the liver and thus prolongs the clotting time. The drug is used orally. If the prothrombin time is in the vicinity of 100% normal, 300 mg. of the drug is given. The prothrombin time is tested every morning and the subsequent dose is regulated accordingly. The aim is to keep it around 35 seconds (normal 20 seconds). The second dose is frequently 200 mg. and the daily dose thereafter 100 or 50 mg. It may be necessary to omit Dicumarol for some days, if the prothrombin time is above 40 seconds. Treatment is continued for 3 or more weeks until the patient is ambulatory.

Antidote:—If there are signs of bleeding, vitamin 'K' 50 to 100 mg, should be given intravenously. In severe cases of hæmorrhage blood transfusion should be resorted to.

Tromexon:—This recent drug is a derivative of dicumarol. It is less toxic and is readily excreted but possesses only one fourth the potency of dicumarol. On the 1st day 300 mg. are given four times. Thereafter, the daily dose is reduced to 300 to 600 mg.

Heparin: —Heparin inhibits blood coagulation both in vitro and in vivo. It is given intravenously 100 mg. (10,000 units) every 4 to 6 hours.

Heparin-Pitkin menstruum:—Attempts have been made to prolong the action of Heparin by incorporating it in Pitkin's menstruum (Heparin 100 mg. in 18% gelatin, 8% glucose 1% acetic acid and distilled water). A single injection adequately prolongs the clotting time for 24 hours. Leo Loewe and Eiber have reported (1949) the therapeutic superiority of Heparin-Pitkin menstruum over Dicumarol The chief advantages of Heparin-Pitkin menstruum are:—(1) Quick effect; and (2) No toxicity. 300-400 mg. are given every second day intramuscularly. The coagulation time of blood is kept at 30-45 minutes or about 3 times the normal.

Antidote:—If bleeding occurs during Heparin therapy, Protamine 50 mg. is given intravenously.

Combined therapy:—If Heparin is combined with dicumarol, Heparin is given only during the first 36-48 hours of treatment until dicumarol has had time to work and most workers e.g. Barker et al (1947) recommend 50 mg. intravenously every 4 hours.

Coronary insufficiency.—Coronary insufficiency is engendered where the coronary flow or blood supply to the myocardium cannot cope with the nutritional demands of the heart muscle. According to Master (1949) coronary insufficiency is best visualised as an episode of angina pectoris. The drugs that are useful in this condition are the coronary vasodilators.

Vasodilators.—During recent years a series of new preparations are in use, which are believed to dilate coronary vessels and increase the blood flow to the heart. The common ones employed are :-

Diuretin:—(Theobromin et sodii salicylas) 03-0.5 gm. t.d.s.

Aminophyllin:—(Theophyllin ethylene diamine). This drug is frequently employed. Orally, 0·1-0·2 gm. t.d.s. By injection 0·48 gm. intramuscularly or 0·24 gm. I.V. slowly.

Theominal :- 0.3 gm. t.d.s.

Erythrol tetranitrate: -0.03 gm. to 0.06 gm. t.d.s

 $Nicotinic\ acid:$  —100 mg. with glucose given intravenously slowly.

Khellin:—Very recently a potent coronary dilator, khellin, has been found useful in angina pectoris. It is a crystalline derivative of the seed of Ammi Visnaga that grows wild in Mediterranean countries. It has a powerful vaso-dilator action which is 4 to 5 times that of Aminophyllin. It is very selective in its action on coronary vessels and does not affect the blood-pressure. It is available as Viscardin (B.D.H.). Anrep et al (1949) reported gratifying results from Khellin therapy in angina pectoris under a dosage of 50 to 100 mg. by mouth t,d.s. or one or more intramuscular injections of 100 mg. per day.

Having discussed the recent drug therapy of acute coronary diseases, it must be emphasised that it does not replace the routine emergency treatment to be adopted e.g., giving full doses of morphia for relieving pain in coronary occlusion and treating complications like congestive heart failure by the digitalis group of drugs.

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## Anticoagulants in Coronary Occlusion

The general concensus of opinion now is in favour of anti-coagulants, as a notable saving of lives and reduction of complications have been possible by their use. Dicumarol is superior to heparin for prolonged treatment, but requires laboratory control of prothrombin levels. Liver or kidney disease of some degree of severity would be contraindications for its use. The sooner therapy is begun after infarction the better. Dicumarol has a therapeutic lag of 24 to 30 hours and so it may be a good thing to give heparin, dicumarol being started simultaneously to produce a more lasting effect. If no thrombo-embolic complication is involved, anticoagulants may be stopped in the 3rd week. In large infarctions, and heart-failure or when both are present, 4 to 6 weeks administration of the drug is recommended.—(Med. Jour. Abst., Squibb, 1952).

## IMPERFORATE ANUS\*

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IMPERFORATE anus is a congenital defect seen nearly equally in male and female infants. In the present paper, I shall deal with its developmental anatomy, incidence, diagnosis and methods of treatment.

Developmental anatomy.—During the feetal development of the rectum and anal canal a certain series of events takes place and any abnormality in the sequence of this series results in the condition of an imperforate anus. The development may be abnormal or it may stop short at any stage. In normal development the hind gut ends blindly under the surface of the perineum and the ectoderm of the perineum invaginates to form a depression called the proctodium. This depression and the blind caudal end of the hind gut are separated by a membrane called the cloacal or anal membrane. The membrane in its turn disappears so that the gut opens on the surface of the perineum through a normal anus. Failure of any of these stages to complete, results in imperforated anus of different types.

In a fair number of cases the absence of an anal opening is accompanied by some form of fistula—recto-vaginal, rectourethral, or recto vesical. This abnormal communication is due to error in another phase of development which takes place while the hind gut is being differentiated from the common cloaca in early embryonic life. The cloacal sinus of the early embryo gets partitioned into an anterior uro-genital sinus and a posterior part which forms the rectum, by lateral ingrowths of two fold of mesoderm—Folds of Rathke—which in turn fuse in the midline form the rectovesical septum and thus completely separate the rectum behind and the urogenital structures in front. A failure of fusion results in an abnormal communication between the rectum and urinary bladder or vagina in the female and prostatic or membranous urethra in the male. In females it is sometimes associated with double vagina (failure of Mullerian ducts to fuse).

Incidence:—Millard Rosenblatt and May have reported the incidence of congenital malformations of anus and rectum as 0·14% of total admissions in a children's hospital. Out of the 20 cases of imperforate anus that he studied 11 were males and 9 were females. I have no such detailed statistics with me. During the last five years I have come across 12 cases of imperforate anus of different varietie the detailed analysis of which, will be presented at a later stage.

CLINICAL TYPES:—1. When there is no anal opening and the meconium has no outlet—the result is that the infant is seen late and there are signs of low intestinal obstruction.

2. In cases where there is no anal opening but the meconium is seen coming out from the urethra or vagina, even when the infant is seen days after the birth there are no signs of intestinal obstruction. In cases of this type a careful search should be made for a fistulous communication. And sometimes in the males only milking of the urethra may show presence of meconium at the external urinary meatus, and in the females a pressure on the perineal body may help to detect the real condition.

Developmentally imperforate anus may be of different degrees.

- I. The first type is the simplest; here the anal membrane has only failed to rupture; there is a dimple and invariably a bulge when the infant cries.
- II. In the second variety, the anal canal has not formed; the rectum ends blindly as a pouch at some variable distance from the skin surface. There may or may not be any bulge when the infant cries. There is no dimple.
- III. In the third variety even the rectum is not formed and the hind gut ends very high as a blind sac. There is no bulge when the infant cries.
- IV. In the fourth variety the anal opening is present, rectum is also developed but the segment between the lower end of the rectum and the anal canal is stenosed.
- V. In the fifth variety there is no anal opening and the rectum communicates with the vagina, urethra, or bladder; (cases where the anal canal is present and there is a fistulous communication do not come in the category of true imperforate anus).

Diagnosis:—Thorough examination of the parts of the new born child is absolutely essential to recognise the condition early. From the treatment point of view it is very essential to assess the position of the blind end of the gut in relation to the perineal skin. The important question to be answered is (a) can the gut end be brought down to the perineum and an artificial anus created immediately? (b) should a life saving colostomy be done immediately and the attempt to make the perineal anus be postponed for a later date? Colostomy in these infants is fraught with a very high degree of mortality. Bulge at the usual place of the anus when the child cries is not a true guide to the position of the blind end.

The technique suggested by Wangensteen and Rice of taking radiographs with the infant suspended in a head down position and the site of anal dimple marked by a mental marker, is fairly satisfactory though not infallible. The shadow of the gas bubble in the blind end of the gut is the indication of its position. The radiogram should be taken 8 hours after birth, as that much time is taken by the gases in the intestinal tract to travel that distance in the newborn; further, the infant should be suspended for about ten minutes before taking the picture.

Recently DeSa and Irani (1951) have mentioned about the meconium-bead sign there being a thin beaded line of meconium in the median raphe between the anal dimple and the root of the scrotum. This sign according to them indicates that the gut end is close by. I have not till now come across this sign in any case but it is an interesting observation and needs further study.

TREATMENT:—The ideal aimed at, is to establish a perineal anus. Much depends upon the degree of development of the hind gut. In the simple variety where only the proctodial membrane has failed to rupture, one has only to divide the membrane. In others it is absolutely essential to locate the blind end of the rectocolonic segment before doing an operation. This is done by taking a skiagram as described above; if the distance between the anal skin and the blind end is 2.5 cm. or less the chances are that the bowel can be brought to the surface. In case the distance is more, it is usually not possible to bring the blind end down, and in such cases a left inguinal colostomy should be made.

The actual operation is more or less a straightforward procedure. A vertical incision is made from the root of the scrotum to the tip of the coccyx, and the dissection is carried upwards and backwards, directed to the hollow of the sacrum rather than anteriorly to avoid the danger of damaging the bulb of the urethra. The anal sphineter in this incision has been divided antero-posteriorly so that its function is retained. The blind end of the rectum is seen as a bluish bulge which is opened up by a point of knife, dilated by a hæmostat and the edges brought down and anchored to the skin margins by a few interrupted sutures, between the two lateral halves of the divided sphineter muscle.

In cases where a rectovaginal fistula is also present the portion of the bowel involved is also brought to the surface and for this greater mobilisation of the rectum has to be done than in other cases. The repair of recto-urethral and vesical fistula should be done at a later stage when the child attains the age of one year or more.

Wallace and Calvin (1948) state that in a majority of cases of imperforate anus, surgical repair from a perineal approach is possible and a preliminary colostomy is rarely called for. Insertion of an indwelling urethral catheter is safe before operation. Free mobilisation of the rectal pouch is essential to bring the bowel edges to the skin without tension. When this anastomosis breaks down they have suggested a plastic operation to form a skin lined anal canal, which they do by a method of sliding or pedestal graft of the skin and subcutaneous tissue mobilised on each side of the anus and turned inwards so that the ends rest against the edges of the mucosa.

Post-operatively dilatation of the anus must be done at frequent intervals to prevent troublesome stricture.

In those cases where the gut end is high up and it is not possible to bring it down, a life-saving colostomy should be done; the death rate in such colostomy cases is very high and the period during which these infants survive is a miserable one.

Case analysis.—During the last five years the author has come across 12 cases of imperforate anus, 8 were males and 4 were females, and their different clinical types have been classified as below:—

Туре	Males	Females	Total
I. Imperforate anus without fist communication.	tulous 6	2	8
<ol> <li>Imperforate anus with fist communication.</li> </ol>	ulous 2	2	4
Tota	ıl 8	4	12

In the following table a classification of the cases according to different anatomical varieties has been made:

	Anatomical variety	No. of cases	Remarks
1.	Simple type where only anal membrane had failed to rupture.	2	
2.	Where anal canal had not formed and the rectum ended blindly at varying distances	9	All four cases of some sort of fistulous communication belonged to this category.
3. \	Where rectum had not formed	1	bolonged to this caregory.
	Total	12	

### Diagramatic representation:



Rectum and anal canal have formed normally but the anal membrane is not rup.





Anal canal is absent, the rectum has formed.

3rd variety.



Rectum has not formed, the hind gut ends high up near the pelvic brim.

From the above figures it is clear that the largest number of cases of imperforate anus is of the 2nd variety, that is those where

the anal canal has not formed and the rectum ends blindly at some distance from the surface. This fact is important from the treatment point of view. Those cases where the rectum is also not formed are very few, about 8% in this short series.

The line of treatment adopted in this series of cases has been the same as already described in a previous paragraph. The majority of cases were seen early, before signs of low bowel obstruction were manifest. Most of the cases were subjected to skiagraphic test for determining the position of the blind end, and in one case the rectal pouch appeared fairly high in the X-ray plate but on perineal exploration it was easily accessible. In one case, on perineal exploration it was found that the rectum was also not developed and nothing could be done by way of treatment as the parents were very averse to the very idea of a colostomy anus.

Summary.—In the present paper a brief description of the embryological basis of imperforate anus is given.

A short review of the literature on the subject has also been made.

The importance of assessment of the position of the blind gut end by radiography has been stressed. Its pitfalls have also been brought out.

A short description of the operative procedure is given.

A brief account is furnished of 12 personal cases; in this series the majority of cases were of that type where the anal canal had not formed (stage of ectodermal invagination forming the proctodeum had failed) and rectum had ended at some distance from the surface of the perineum.

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## Vivax Malaria with Long Incubation Periods

Eddleman, Hale and Snowden have recorded their observations on seven cases of proved vivax malaria, between May and July 1951, in military personnel returned from the Korean Theatre of war. The special interest attaching to these cases lies in the fact that the symptoms appeared from  $2\frac{1}{2}$  to eight months after they had returned to U.S.A. They were all treated with chloroquine (one of the 4-aminoquinolines) and discharged cured from the infirmary.—(U.S. Armed Forces, Med. Jour., 21, p. 1693, 1951).

# THE USE OF SYMPATHOLYTIC DRUGS IN HYPERTENSION\*

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In the absence of accurate knowledge of the ætiology of hypertension, its treatment continues to be a difficult task but important studies which have been and are being conducted offer hopeful solutions to this problem.

The drugs in use for hypertension are numerous and varied and their effects are far from being uniform or constant. Surgical treatment in the form of periarterial sympathectomy was considered

hopeful for some time, but it had also limitations.

Sympatholytic chemical drugs act as therapeutic substitutes for sympathectomy, the underlying principle of which is the severance of the sympathetic nerve (thoracolumbar visceral), causing vasodilatation, resulting in a fall of blood pressure, and a slowing of the heart. Drugs inhibiting adrenergic or sympathetic stimulation may for the sake of convenience be divided into three groups:—

(1) Drugs which are both adrenolytic and sympatheolytic. (2) Adrenolytic only, inhibiting the effects of the circulating adrenaline. (3) Those which block the ganglia of the sympathetic and parasympathetic nerves and inhibit all preganglionic impulses.

GROUP I.—Many different chemical compounds antagonise the action of adrenaline and sympathetic nerve stimulation e.g., Ergotoxine, Ergotamine etc. These antagonists have not found wide therapeutic application, probably due to the fact, that Ergotoxine, the first drug to be discovered had powerful vasoconstrictor action, greatly limiting its use. Ergotoxine is not a single substance but a mixture of three alkaloids viz., ergocornine, ergocrystine, and ergokryptine. Hydrogenation of these alkaloids renders them less toxic, less emetic, more sympatholytic and adrenolytic and also reduces their direct action on smooth muscles.

The recently introduced Hydergine (Sandoz) is a combination in equal parts of all the three hydrated alkaloids. It is adrenolytic and sympatholytic. Clinical trials so far reported suggest that it may be of value in the treatment of hypertension, angina and peripheral vascular diseases. The dosage for hypertension depends on the individual response of the patient and should therefore, be adjusted to suit the needs of each case. Hypertensive patients have been reported to be more sensitive to these hydrated alkaloids than patients with normal blood pressure. "A preliminary injection test is needed to determine the individual response to hydergine. Following a 30 minutes' rest in a recumbent position, the blood pressure is determined and then 1 to 2 cc. of hydergine is injected I.M. Patients with labile hypertension respond readily with a fall

of blood pressure. If the depressor action persists for several hours following the injection test with hydergine, the chances of success for the treatment will be considerably greater. Side-effects such as, nasal congestion, slight postural hypotension, nausea, intestinal colic are occasionally met with.

Veratrum viride, another drug of this class once popular in the treatment of fever, fell later into disrepute. Certain of its alkaloids, germitrine and germidine have been shown to have some hypotensive effect. The effective dose of germitrine was found to be 0.05 to 0.06 mg. I.V. and 2.5 to 3 mg. orally and of germidrine 0.1 to 0.38 mg. I.V. and 2.5 to 3.5 mg. orally. Nausea, vomiting and even collapse may occur if extreme care is not observed as regards dosage. With veratrum alkaloids, the naximum hypotensive effect was seen within I or 2 hours, accompanied by bradycardia. Response to the same dose varied on different occasions. but no tolerance developed. There is thus some difficulty in continuing the treatment for some time. Proprietary commercial drugs of this class are Veratone (P.D. & Co.), Veriloid (Riker Lab.). "As Veriloid it may be given orally or by intravenous injection. The initial oral dose is 8 mg. four times a day after food; subsequent increases must be made cautiously, as the margin between the effective and toxic dose is very small."

Another drug of the series is Tolazolinæ hydrochloride (Priscol-Ciba). It is a sympatholytic and adrenolytic compound. Its effect is more lasting than the other commonly used vasodilators and its effect is chiefly on the peripheral arteries and arterioles. In the treatment of Raynaud's disease it is of great value and is likely to be of benefit in Buerger's disease, diabetic gangrene, thrombophlebitis, frostbite etc. Recently it has been used to reduce muscle spasm in poliomyelitis. Some side reactions like flushing, tachycardia, tingling, epigastric pain, diarrhæa, vomiting etc. have been noted. These can however, be minimised by adjusting the dosage. The dosage recommended is 25 to 50 mg. either by mouth or by I.V. or I.M. injection. As it actively stimulates gastric secretion it should not be used in cases of gastric ulcer.

GROUP II.—Adrenolytic drugs:—These block the effects of the circulating adrenaline. Piperoxan (May & Baker) Benodaine (Merck U.S.A.) are used chiefly for the diagnosis and control of pheochromocytoma—chromaffin tumour, where there is extreme circulation of adrenaline, resulting in a great increase in blood pressure. Hypertension caused by chromaffin tissue-tumour is readily distinguished from that caused by other factors, since piperoxan, when injected I.V., causes an abrupt drop in blood pressure. After diagnosis, the tumour of the chromaffin tissue can be removed surgically leading to a complete cure.

Bæq and Fredric, have stressed that a distinction should be between adrenolytic and sympath lytic action. They found that

some drugs would antagonise the effect of sympathetic stimulation and injection of adrenaline whilst others acted only against injected adrenaline, but did not antagonise the effect of sympathetic stimulation. This finding is of great practical importance, since drugs often assessed for adrenolytic activity are occasionally used for sympatholytic effect.

GROUP III.—Ganglion-blocking agents:-Drugs of this class have got a quaternary ammonium group attached to the molecule. They block the ganglia of the sympathetic and parasympathetic nerves. The most important drugs of the class are: Tetra ethyl ammonium chloride formerly known as Etamon, now known as Beparon (P.D. & Co.) and Hexamethonium bromide. In peripheral vascular diseases and hypertension, Beparon is used in a 10% solution 1 to 5 c.c. I.V. or 10 to 12 c.c. I.M. In hypertensive states it lowers the blood pressure and relieves headache, but the action is transient and the effect is unpredictable; other smooth muscle relaxants such as hexamethonium compounds are therefore preferred. Penta and hexamethonium bromides have a more lasting effect and C6 compounds (Hexa) have been found to have even better therapeutic effects than the C) (Penta) compounds. Hexamethonium bromide (Vegolysin M.B.) Dose: 4 to 8 grs. orally; and 2/5 to 3/4 gr. subcutaneously or I.M.

The drug can be administered by the I.V. route as well but in a smaller dose. Absorption from the gut is very poor and very irregular. It has a slightly bitter taste. Treatment is usually begun by noting the effects of an I.V. injection (25 mg.) on blood pressure. After this, 25 to 50 mg. is given subcutaneously two or three times daily and the dose increased until the blood pressure is controlled. The patient should lie down for an hour after each injection, in order to avoid postural hypotension. In view of the various complications, to be guarded against, in the course of treatment this drug should be reserved only for cases of severe hypertension. Side-effects commonly encountered are: dilatation of the pupil, blurred vision, dryness of the mouth, postural faintness, nausea and constipation.

Rosenheim and Kauntze state (Pro. Royal Soc. Med.) that of the various drugs which have been recommended from time to time for hypertension, Hexamethonium has proved to be the most effective. It is however, necessary to register a few words of caution in Hexamethonium therapy. "There is no justification for the use of these drugs in mild benign hypertension. Patients with evidence of severe vascular disease affecting the cerebral, coronary or renal vessels should not be treated because occlusion of their arteriosclerotic vessels by thrombosis may occur during the phase of hypotension. Coronary thrombosis and other acute catastrophes have occurred during treatment. Until the indications for their use have been more carefully defined, the methonium drugs should only

be used in carefully selected patients with severe hypertension who can be kept under close medical observation and control.

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#### The Newer Antihy pertensive Drugs

The recent discovery of drugs which are much more effective in maintaining a lowered blood pressure is a major advance and their current availability makes the problem of using them properly, of immediate practical importance. In many cases of hypertension a major factor is emotional tension operating through the sympathetic and causing vasoconstriction. Indeed more than one actiologic agent may be operative. Therefore, no single specific remedy has so far been found for hypertension. 'Neurogenic' hypertension may be relieved by adequate sympathectomy.

Similar results might be obtained by drugs which chemically block the sympathetic pathways. Of these hexamethonium is the only preparation thus far carefully studied which has a sufficiently sustained action and is promising, as reported by Campbell and Robertson in England (1950) and by Restall and Smirk in New Zealand (1950). It is an anticholinergic drug, causes a blocking in the sympathetic and parasympathetic ganglia interrupting both adrenergic and cholinergic impulses. It causes a dilatation of the peripheral and renal vessels with a fall in B.P. It is potent on I.V. injection, the maximal effects occurring in 15 to 30 minutes and gradually subsiding after an hour or two. It may be given orally but absorption is poor (less than 1/20 of parenteral dose), variable and unpredictable. It must be given 4 to 6 times a day to maintain an effect. Progressive increase in dosage is required by some patients who develop tolerance to it. Large doses often cause distressing symptoms from the associated parasympathetic blockade e.g. dryness of mouth, eveloplegia, severe constipation even ileus, anuria and transient impotence. These may sometimes be relieved by urecholine etc.

There is marked individual variation in susceptibility to hexamethonium even to relatively minute doses; some develop occasionally, unexpected and alarmingly severe hypotensive reactions. It is now generally agreed that a more uniform lowering of B.P., may be obtained by the administration of another type of antihypertensive drug, midway between the doses of hexamethonium. The most effective adjuvant now available is Apresoline (I. hydrazinophthalazine), which is a mildly adrenolytic and sympatholytic rather than a ganglionic blocking agent. It causes a relaxation of the peripheral arteries and a fall in B P., with an increased cardiac output, and an increased bloodflow in the coronary and renal arteries. In large doses it is also prone to cause severe headaches, nausea, vomiting tachycardia, palpitation, and prostration. But when given in conjunction with hexamethonium, these disturbances are less marked and may be controlled by antihistamines eq. Dramamine. Extreme caution is required therefore, in administering these drugs. They are powerful agents, dangerous, if clumsily used; they should be reserved for cases with significant symptoms, or with evidences of advanced arteriolar sclerosis and for cases in the malignant phase. Expertly handled, these drugs have given excellent results .- (Editorial in Annals of Internal Medicine, Am. Coll. Physicians, Jan. 1953).

#### MANAGEMENT OF ENTERIC FEVER\*

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ENTERIC (enteron-intestines) fever, a generic name to include the typhoid and the paratyphoid groups of fevers, is one of the common diseases of the so-called -- "fly season". No age is exempt, but the common age incidence is between 3-15 years. Its symptomatology and course are found modified both in pediatrics and in geriatrics clinically. Enteric fever is a more suitable nomenclature but a loose practice to use for a continuous fever of 4-5 days' duration without thorough late investigations; and should be condemned. It is very common tropical malady characterised by continuous pyrexia, and is notorious for the innumerable complications and sequelæ. Treatment of enteric fever needs all the three fundamentals, namely: (a) persistent patients, (b) fullest faith, and the (c) constant co-operation on the part of the patient without which the physician's efforts remain 'half-hearted'. Thanks to the recent advent of Chloromycetin (Capsules and Oral Suspension) the prognosis of the disease has become exceedingly bright-in the adults as well as in infants and children. It has reduced complications, minimised mortality, and lessened the duration of the disease. It was Jenner who, in 1849, established that typhoid and typhus fevers are two distinctly separate clinical entities. The incubation period of enteric fever is 1 week to 1 month. The whole symptomatology, complications, and the treatment of the disease can well be understood by keeping in mind the basic pathology of the disease-"Generalised typhoid bacteræmia with intestinal ulcerations and lowered body-vitality." Owing to the serious and prolonged illness the general resistance of the patient is lowered as a whole which is further reduced on account of the restricted dietary allowed to the patient. The usual time complications occur is the end of the second and the beginning of the third week, and the serious complications seen during this period are: hæmorrhage and perforation of the bowel. The abdomen becomes scaphoid and the spleen is palpable the temperature runs more or less constant between 101°-104°F. and there may be the "typhoid state" in the second week of the disease.

Management of enteric fever.—Management of a case of enteric fever can be considered under three main headings:—

- (1) Nursing, (2) diet, and (3) treatment of the symptoms and complications as they arise in the course of the disease and thereafter.
- 1. Nursing:—(a) Patient's bed should be soft, clean, and tidy. The patient must be given absolute rest in bed for at least a week after the temperature comes down to normal.

<sup>\*</sup> Specially contributed to THE ANTISEPTIO.

(b) Bed-pan and urine-pot should be provided to the patient.

(c) Proper and regular care should be taken of the back, buttocks, and the throat and mouth. Potassium chlorate or dettol gargles are given twice a day and boroglycerine is applied to the tongue and the throat. Back and buttocks are cleansed with spirit and liberally dusted with a fine powder containing equal quantities of talcum powder, boric powder, and sulphanilamide powder. Body should be sponged with tepid alum lotion at least once in three or four days. Bed-sores are avoided by frequent and gentle change of posture of the patient. (d) Conversation should be restricted. (e) The temperature is recorded every four hours, and the condition of the bowels is also noted on the temperature chart.

Diet: -As the disease lasts on an average for three weeks and as the primary seat of the pathological lesion is the intestines one has to be very cautious in drawing up a suitable dietary for the patient, The modern conception is "to allow liberal, non-irritant (bland) liquid diet fairly rich in first-class proteins of high biological value and all the vitamins, especially vitamins A, B, C, and B complex, provided the patient has a natural desire for the food, and is quite free from intestinal complications, e.g., constipation, diarrhea, or tympanites." The menu may be planned out of the following articles: Ovaltinised milk-tea, plenty of glucose-sodii bicarb water (at least 4-6 pints of water with 4-6 ounces of glucose and 4-6 drachms of sodii bicarb), mossumbi juice strained and sweetened with glucose, grapes, freshly prepared buttermilk, and bland drinks like cocoanut water, barley water or arrowroot water. Feeds are given by a feeding-cup. Fats are eliminated from the diet, and if there is diarrhea, carbohydrates are also restricted; taka diastase powder is prescribed to facilitate the digestion of the carbohydrates. The quantity and the quality of the food may be increased and improved as the appetite of the patient increases. If the patient can afford, he may be prescribed "Caseinone of Alembic or Elixir Aminoxyl of Raptakos and Brett Co." which are preparations containing protein hydrolysates in palatable form for oral use.

III. Treatment of the symptoms and complications as they appear in the course of the disease:—As a routine give the following medicines:—

(1)	Ŗ	Salol	* 0.0	gr. v
		Hexamine	***	gr. x
		Calcium gluconate		gr. xv
		Mucilage	***	q.s.
		Oil cinnamoni		m, iv
		Potassium citras	***	gr. xx
		Syp. ginger	**	m lx
		Spt. ammon aromaticus		m, xx
		Liq. Ammon acetatis dil		31
		Aqua chloroformi ad		31

Mft. Mist. such three doses; one every six hours.

The old "Burney-Yeo's Chlorinated-quinine mixture."

Method of dispensing it:—In a clean and dry airtight wellstoppered blue coloured bottle put in—

Ŗ	Potas Chloras	***	gr. xx
	Acid HCl pure		m, ix

Cork the bottle at once and then after 10 minutes gradually add water up to 12 ounces, shaking the bottle all the time. Again stopper the bottle and place it inverted for 24 to 36 hours. Just before use one ounce of this (Chlorine water) + grs. ii of Quinine sulphas makes the whole thing to be taken statum; such thrice daily.

- (2) Therscebrin Gelseals (Eli Lilly & Co.) ... 1
  Perihemin Capsules (Lederle) ... 1
  both together to be swallowed as a whole with water twice a day.
- (3) Inject "Dierysticin (Squibbs)"—in 2 c.c. aqua pro-injectio intramuscularly twice
- (3) Inject "Dierysticin (Squibbs)"—in 2 c.c. aqua pro-injectic intramuscularly twice a week.

  Note: Dierysticin of Squibbs or Combictic of Pfizer is Penicillin-Strepto-
- mycin combined, 4 lakhs units of the former + 1 gm, of the latter.

  (4) Hexindon tablet (Indon Co.) .. 1
  Sodii bicarb .. gr. vi
  - Mft. powder and give thrice a day.

TREATMENT OF THE COMMON SYMPTOMS.—1. Insomnia:—Give hypnotics.

3	Potassium Bromide		gr x
	Paraldehyde pure	***	3 i
	Extractum Glycyrrhiza Liq.	***	M XX
	Mifeilage	***	q. s.
	Syrup Limonis	***	3 ii
	Aqua Chloroformi ad	***	3 i
	Mft. Mist. H. S.		-

Paraldehyde pure may be injected intragluteally in dosage of 5-6 cc. to induce sleep. Paraldehyde is a safe and effective hypnotic in enteric fever, and can be prescribed to both children and adults alike.

#### 2. Headache:

R	Aspirin	***	gr. iv	
	Quinine sulph.	***	gr. ii	
	Phenacetin	**	gr. iii	
	Caffeine citras	***	gr. i	

in cachets. One to be taken as directed by the physician.

Or,

Saridon Tablet (Roche)—1.

And, in cases where the cause of headache is increased intracranial tension withdrawal of a few c.c. of the cerebro-spinal fluid by lumbar puncture gives quick relief. Similarly, if there is hyperpyrexia (temperature above 102°F) cold compress to the forehead with ice-water is a good therapeutic measure.

3. Delirium:—It is one of the chief manifestations of the 'typhoid-toxemia', and in this condition hypnotics are indicated.

Further, I.V. injection of 50 cc. Glucose + Vitamin C 500 mg. + Pelonin (Glaxo) 2 cc. slowly, also removes the delirium. Here one thing is very important to remember. The regular use of "Aldestan" or "Chloromycetin" from the very beginning of the illness greatly minimises the chance of the occurrence both of delirium and toxemia.

- 4. Hyperpyrexia:—(a) Ice-cap lightly put over forehead, (b) High enema of ice-water. (c) Diaphoretic mixture one ounce every 4 hours.
- 5. Toxaemia:—Toxæmia is greatly reduced and may even be averted, by:—(a) Regular administration of vitamin B complex and vitamin C, (e.g. three B complex with C tablets orally). (b) Proper administration of chloromycetin or aldestan. (c) Ensuring adequate functioning of the skin, bowels, and the kidneys.
- 6. Constipation:—Always treat constipation by the use of enemata or very mild laxatives. If in the first week, give:—

Ŗ	Calomel		***	gr. ‡
	Pulv. Rhei Co.		***	gr. i
	Sodii bicarb ad		***	gr. vi
	Mft. Pulv.	Send such 4.	SigO	ne every & hourly.

If in the second week, then

Ŗ	Glycerine pure	***	40
	Soapwater		3 111
	Mft. Enema, give 'high enema'	by	enema-can.

If in the third week, then:

Ŗ	Tr. Asafostida	3 ii
	Oil turpentine	3 iv
	Glycerine pure	3 ii
	Soap water	3 iv

Mix all together and give high up by the help of the Enema Syringe.

Note.—These enemata are to be given very gently, i.e., the enema fluid is to be run in very slowly.

#### 7. Diarrhoea:

R Hexindon Tablet (Indon Co.) . . . . . . . . . . . . . . . gr. vi

Crush and make into powder. Such three powders.

One three times daily.

If these do not avail, give a high rectal enema of Tr. Opii drachm I with boiled starch-water ounces 4, after a preliminary colonic lavage with warm Sodii bicarb lotion (drachm I of Sodii bicarb in a pint of hot water). Stop food for the time being.

8. Tympanites:—(a) Turpentine stupes drachms: 2 of Oil Turpentine in a pint of boiling water is used, for 20-30 minutes only. (b) Pass a flatus tube No. 16 high up in the rectum,

about a foot high, and leave it in situ for about 15 minutes. (c) As a last resort inject 'Prostigmine (Roche)'—1 cc. I.M. statum. Repeat after 8 hours if required. (d) Pitressin (P. D. & Co.) may also be tried by injection to relieve the abdominal distention.

#### 9. Hiccough:-

R Chloretone ... gr. i
Menthol crystals ... gr. 1/6
Sodii bicarb ad ... gr. vi

Such 6 powders. Take one every fifteen minutes with water till all these powders are finished. Apply mustard-plaster to the epigastrium, and inject Bellafoline (Sandoz) 1 e.c. I.M. repeat after 6 hours, if required.

- 10. Pulmonary ædema:—Inject atropine sulphas gr. 1/100 subcutaneously statum. Rapid withdrawal of about 10 ounces of blood by inserting a French's bleeding needle into one of the veins of the antecubital fossa is also a life saving measure. Low B.P. and gross anæmia are the two chief contraindications for venesection.
- 11. Cardiac asthenia:—Inject camphor in oil 1 cc., S.C., and repeat after 6 hours if necessary. Inject Adrenaline HCl 1 cc. + Atropine sulph gr. 1/100 + Strychnine gr. 1/60. all together, stat. Liquid Coramine (Ciba) 1 cc. in water every 4 hours, with Spt. vini gallici m xx in each dose.

Hæmorrhage and perforation—their management.—1. For haemorrhage:—Raise the foot-end of the bed by means of bricks, keep an ice-bag lightly applied over the right-iliac fossa. Inject morphia gr.  $^{1}/_{6}$  with Atropine sulph gr.  $^{1}/100$  stat., and repeat 6 hourly; Inj. Vitamin K 10 mgm. Coagulen (Ciba) 5 cc. together I.M.; and intravenously give Ca + Vitamin C. Finally try blood transfusion after proper matching; the chief signs of intestinal hæmorrhage in enteric fever are: a sudden fall in body temperature, a sensation of choking and giddiness, and an increase in the pulse-rate.

2. For perforation:—It calls for immediate consultation and the assistance of an expert surgeon. Its earliest sign is: sudden onset of sharp and "stabbing" pain in the hypogastric region. It is the cause of 1 out of every 5 deaths in enteric fever. If the perforated coil of the gut lies in the abdominal cavity, there is obliteration of liver dullness, and if it lies in the pelvic cavity, there is increased frequency of micturition.

Aldestan and chloromycetin in the treatment of enteric fever.—1. Aldestan:—It is a proprietary preparation manufactured by the Chemica Limited of Haife, Palestine. It is an organic tin compound—"Heptadekyl aldehyde stanoxystearate plus stannum colloidale," in tablet form. It is said to be very useful in early cases; and prior to the advent of chloromycetin Dr. Patel of Bombay and Dr. Subramaniam of Madras were its main advocates.

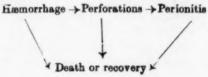
The drug lessens the chances of toxemia, hemorrhage, and delirium, especially when started early in the disease. It is not lethal to the Eberthella type of bacilli. Each tablet = 0.012 gram of the metallic tin. Average dosage is 2 tablets thrice daily for 2 weeks; but if the patient behaves paradoxically, i.e., if the mental condition deteriorates the drug is soon discontinued. Simultaneous administration of potassium iodide is said to potentiate the action of "aldestan".

2. Chloromycetin:—In chloromycetin we find a drug nearest to the specific for the treatment of the enteric fever. It is chemically an aromatic nitro-compound, and is now produced synthetically for commercial purposes. Chloromycetin is the trade name for "Chloramphenicol" of Parke Davis & Co. It is purely bacteriostatic, and does not kill the typhoid germs either in the bowels or in the blood. It is available in bottles of 12 capsules, each =250 mg. or 0.25 gram of the active drug. Now we have a Chloromycetin oral supsension also available for use in children. It is sold in the market in bottles of 60 cc., each 4 cc. of the suspension = 125 mg. of the active substance. As a rule the dose is 50 mg. per seer of the body-weight. The medicine is quite compatible with the sulpha drugs and other antibiotics. Temperature is brought down to normal on the 4th or 5th day of starting this medicine. Although it lessens the gravity of the disease, reduces the chances of complications and greatly cuts short the period of pyrexia it does not however, rule out the relapse or the recurrence of enteric fever; the other recognised forms of treatment must therefore, be continued pari passu. Thus, chloromycetin treatment is complementary and not obligatory. Its administration is at times accompanied by nausea, headache, and diarrhœa, but the alarming complication of chloromycetin therapy is aplastic anæmia which usually and very often passes unnoticed. At present this drug is within the means of only the rich.

Complications of enteric fever.—Enteric fever is notorious for the complications with which it is linked up. Practically every

system may suffer.

1. Alimentary system:—(a) Cracked tongue—i.e., glossitis. Regular oral hygiene will prevent it. (b) Parotitis—May go to suppurate. Occasional sucking of 'Neebu' is a good prophylactic. (c) Duguet's ulcers are tiny ulcers in the pharynx and the fauces. (d) Diarrhœa may be severe and intractable. Tympanites and meteorism may coexist. (e) Cholecystitis—Bile is a good culture medium for the typhoid germs. (f) Hæmorrhage sometimes leads to fairly rapid death.



(g) Perforation—needs immediate surgery. Usual site of perforation is the lower <sup>1</sup>/<sub>3</sub> of the ileum. Acute onset of severe pain in the right iliac fossa, sudden drop of temperature to 99°F or below with a rapid and thready pulse and the obliteration of the area of hepatic dullness, form the classical triad of intestinal perforation in enterte fever.

Rare complications are: Hepatitis, pancreatitis, and appendicitis. Later gall-stones may be seen as a sequel.

- 2. Respiratory system:—(a) Epistaxis and bronchitis in the first week of the disease. (b) Pneumonitis due to prolonged 'prone-position' in the bed, lowered vitality, and feeble blood-circulation. (c) Pulmonary ædema: atropine and venesection are the two important life-saving measures. Pleurisy and phthisis may occur as sequelæ.
- 3. Cardio-vascular system:—(a) Myocarditis with abnormal cardiac rhythm. There is toxic myocarditis with fatty degeneration of the heart muscle. (b) Phlebitis—commonest site is the left femoral vein,  $\rightarrow$  thrombosis, giving rise to "white leg". The treatment of femoral vein thrombosis is to give 10 ounces of 0.5% Sod. citrate sterile solution intravenously. (c) Arteritis—commonest site is the right femoral artery.  $\rightarrow$  Gangrene. (d) Rarely, acute circulatory failure.
- 4. Nervous system:—Typhoid state, "meningism" irritation of meninges and rarely polyneuritis. As sequelæ, aphasia, amnesia (loss of memory), and psychoses.
- 5. Renal system:—Pyelitis, pyelonephritis, pyonephrosis, cystitis and "typhoid bacilluria".
- 6. Genital system:—Prostatitis (or orchitis); in the females vulvovaginitis and mastitis may be seen.
- 7. Eyes and ears:—Corneal ulcers and optic neuritis; otitis media and defective hearing.
- 8. Bones and joints:—(a) Osteo periostitis, common in the hip and less common in the knees and elbows. (b) Chronic osteomyelitis in tibia, spine, ribs and femur. 'Typhoid spine' is an acutely painful and rigid spine in the lumbosacral region due to the inflammation of the ligaments and periosteum of that part of the spine.
- 9. Skin and muscles:—Furunculoses, multiple boils, and bed-sores; hyaline (Zenker's) degeneration of the striated muscles, chiefly of the rectus abdominis, which may rupture and go on to further complications.

As a sequel, alopecia. Pregnancy is often terminated in enteric fever, or the foetus gets emaciated. There may be (a) recrudescence in which the temperature rises high in the third week for a period of a further week or so; (b) relapse; and (c) recurrence.

Management of convalescence.—The aim of managing a convalescent patient after enteric fever is to tone up his bowels

and to raise the general vitality of the body as a whole. The diet is gradually increased in quantity as well as in quality. Patient is first allowed to move in bed, then sit np, and then only get out of bed and have short walks. Patent medicines like Livibron (P. D. & Co.) and Easton's syrup are prescribed. Sometimes after the lysis of the typhoid fever the patient starts "running temperature practically all 24 hours" and it cannot be accounted for. For this the following line of treatment is suggested—

(a) Absolute rest in bed; (b) diet very rich in proteins and vitamins; and (c) Theracebrin (Lilly)—1 with Perihemin (Lederle)—1, both together after meals; Dierysticine (Squibbs)—in 2 c.c. of aqua distillata, I.M., daily, such 6 in all; Bruschettini's vaccine—1 c.c. I.M., on alternate days, such 6—8, and powders containing Cryogenin and Aristochin with Cal. gluconate and Hexindon.

Conclusion.—The mode of infection and the methods of prophylaxis will now be mentioned.

A. Mode of infection:—The main source of infection is the fæces and the urine of the typhoid patients, who may be "active", "convalescents", or "carriers". The carriers are:—(1) Fæcal—true (the focus in the gut); (2) Biliary-pseudo i.e. the focus is in the gall-bladder; (3) Urinary, what is called "typhoid bacilluria". Thus the disease is perpetuated by the carriers, both convalescent and healthy.

Typhoid fever is mainly a food-borne disease; and milk, water, and eatables are the vehicles of infection. The typhoid bacilli develop rapidly in milk, and although they will not withstand desiccation, can remain alive for months together at freezing temperature. Aerated waters often spread the disease if the water used is polluted. Milkmen and cooks are carriers known to have been mainly responsible for serious epidemics of enteric fever. Flies act as mechanical agents in spreading the disease. Histopathologically the disease is one which affects the lymphoid and reticulo endothelial systems, mainly Peyer's patches and the spleen.

B. Methods of prophylaxis:—(1) Sanitary disposal of excreta.

(2) Provision of pure water and food supply:—(a) Water—water supply must be disinfected and purified; (b) milk should be obtained from healthy herds by hygienic milking, and subsequent pasteurisation; (c) food must be used fresh and well cooked, protected from flies. Kitchen hygiene; healthy cooks; and (d) impure ærated waters have to be avoided. (3) Elimination of the source of infection:—(a) Discovery and treatment of "carriers"; (b) anti-fly measures, a liberal use of D.D.T. spray; and (c) inoculation of contacts by "active immunisation".

T.A.B. Inoculation:—T.A.B. vaccine is used, and it is given by the subcutaneous route, the first dose is 1 c.c. and the second which is given 15 days after the first is  $\frac{1}{2}$  c.c. The best site for

injection is the outer side of the deltoid region, and the skin must be well cleaned with spirit before and after the prick. Sterile syringes and needles are to be used. After the inoculation there is a pyrexia lasting for 48 to 72 hours, frontal headache, and general body-aches. Immunity appears in 1 month and lasts for one year. It reduces mortality by about 10 to 15%. One attack of the disease does not confer immunity from subsequent attacks.

Early diagnosis, appropriate and timely treatment, and careful after-management will definitely reduce the severity, shorten the

course, and minimise the complications of enteric fever.

I wish to express my grateful thanks to Sriut Dr. Shyam Narain Mathur, M.B., B.S., Ph.D., Professor of Physiology, Medical College, Lucknow, Physiologist and Philosopher of international repute, to whom I am deeply indebted.

#### Compound F in Arthritic Joints

Intra-articular hydrocortisone is a valuable adjunct in treating rheumatoid arthritis, particularly where complications of parenteral therapy might be expected, says Dr. Kashtan of the Harper Hospital Detroit. He gave a total of 94 injections of compound F to 13 patients, most of them in the knee joints, just below the medial edge of the patella, without any local anæsthesia. In most cases, variable quantities of fluid were aspirated. On occasion, however, there was a dry tap and the response in such cases was not as good as in those where synovial fluid was obtained. It was observed that arthritic involvement was most severe with swelling and increased heat; the synovial was paler than normal, somewhat cloudy and less viscid. Clinical improvement appeared to coincide with increase in viscosity.

Of 13 patients, eleven have returned for repeat injections when pain returned, indicating that they had subjective benefit from the injection. Clinically 8 had an excellent response with decreased joint swelling, improved movements, and reduced joint heat that followed each injection and continued for from 2 to 12 weeks. Three patients had only moderate benefit with decrease in swelling, stiffness and subjective pain lasting only several days up to 2 weeks. Only had no benefit and his knees were in 75° flexion contracture with dry joint space.

Hydrocortisone has been used in conjunction with cortisone and corticotropin in several patients where small maintenance doses of the systemically effective steroids were inadequate to maintain 1 or 2 joints symptom-free. The addition of intra-articular compound F in such cases made it possible to reduce and on several occasions, entirely eliminate maintenance therapy with cortisone and coticotropin.

Control studies were also carried out in several patients for a total of 15 injections using 1 c.c. sterile saline solution or 1% processes solution. The latter failed to obtain greater benefit than those who received saline, whereas compound F was of benefit every time it was used.—(Harper Hosp. Bull. Sept.-Oct. 1902; Abst. Cur. Med. Dig., Jan. 1953).

#### MEASLES\*

HARENDRA NATH BAGCHI, M.B., B.M.S. (B), Calcutta.

AETIOLOGY:—This is an acute specific disease with an initial highly infective catarrhal stage, followed in turn by a characteristic exanthem and a generalised blotchy cutaneous eruption which fades with bluish brown staining and powdery desquamation. Incubation period is 10 to 14 days. The organism is believed to be a filterable virus which is present in the buccal and naso-pharyngeal secretions and in the blood during the initial stages of measles. The disease is usually transmitted from a measles patient in the first seven to ten days of illness to susceptible subjects by droplets of mucus charged with the virus.

Blood picture.—During the incubation period a moderate leucocytosis affecting the neutrophils is the finding; on the appearance of the rash the picture changes to a transient leucopenia. But if leucopenia persists, the prognosis is grave.

Signs and Symptoms:—The onset may be symptomless or there may be malaise, cough and mild coryza and there may be 99°F to 100°F. for a day or two. In some attacks the onset is sudden with vomiting and convulsions and high temperature. A day or two later may be added photophobia, lacrymation and injection of conjunctiva. The temperature rises briskly to 101°F to 102°F. or so with a brief morning remission of 1°F. The discharge from the nose and eyes is at first watery and mucoid and later becomes purulent. The patient is irritable, drowsy and disinclined for food. Shivering or convulsions with vomiting and diarrhea may appear. In the course of the next day catarrhal manifestations are aggravated and accompanied by a hoarse cough. There is general conjunctival injection with production of muco-purulent discharge and a definite subconjunctival ædema of the lower lid (Brownlee's sign).

By the second day catarrhal changes take place in the buccopharyngeal mucous membrane—inflammation with grayish patches on the surface of the gums buccal mucosæ and tonsils. On the palate and uvula, minute petechiæ may be seen. In the last named situation these lesions appear to represent Koplic's spots which commonly appear on the second or third day. They are best seen in daylight commonly on the buccal mucosa opposite the upper premolar teeth and consist of circular erythematous areas about the site of a pin's head upon which lie bluish white specks. On the third day there is often a remission of all symptoms, including the temperature which may come down to normal for some hours; but towards the evening of that day, all symptoms return with increasing intensity; the temperature rapidly shoots up, the face becomes flushed and puffy with the appearance of an ill-defined blotchy rash especially round the eyes and on the forehead; vomiting and diarrhoea may appear for the first time. The respiration rate is raised but auscultation may reveal prolonged breath sounds. In some cases rhonchi and rales may be heard at the bases of the lungs with diminished breath sounds. Various kinds of rashes may appear during the prodromal stage, scarletiform morbilliform and urticarial. The scarletiform prodrome is usually limited to the trunk. The morbilliform type is restricted to the face and upper trunk. The lesions are faint dull red macules resembling those of German measles. The true measles-rash appears behind the ears and at the junction of the forehead and hairy scalp, and consists of small rounded discrete slightly raised maculo-papules above the suface of the surrounding skin. They enlarge rapidly acquiring avoid outlines and coalesce to form large blotchy areas and later an uniform erythema. The colour ranges from a deep pink to dull red. The rash spreads from the face to the neck scalp and chest, arms, back, abdomen and legs and finally the palms and soles, the complete development lasting for 24 to 48 hours from the onset; as successive crops of fresh lesions appear, the temperature tends to rise higher and attains its maximum of 103°F or 104°F just before the rash is fully spread out. Heavy rashes associated with severe attacks are liable to become hæmerrhagic. Browny desquamation follows, confined to the trunk, neck and chest during the febrile period, great irritability, restlessness, insomnia and intermittent delirium are common. Anorexia and thirst are present. The throat may be sore with pain and swelling of the glands at the angle of the jaw. The tongue is heavily coated and peeling takes place in patches all over the surface of the tongue. The skin is hot and dry, the pulse and respiration rates are raised and there may be slight cyanosis and dyspnœa, as also suffocating cough. The urine is scanty; urates and traces of albumin are usually present. In favourable cases defervescence occurs by prolonged crisis in 24 to 36 hours from the full evolution of the rash and usually the temperature remains normal.

PROGNOSIS:—Fatality is common in children under one year of age: (1) Death in the large majority of cases is due to complications due to secondary organisms—the hæmolytic streptococcus, pneumococcus and Pfeiffers' bacillus. (2) Broncho-pneumonia in the young and weak children and in fat babies accounts for 75% of the

total deaths. (3) Septic pneumonia may occur.

Complications:—(1) Lobar pneumonia; (2) catarrhal stomatitis in young and debilitated individuals; (3) cervical cellulitis; (4) cancrum oris; (5) rhinitis in patients with enlarged tonsils and adenoids; (6) enteritis—diarrhœa from catarrh of the intestinal mucosa; (7) otitis media, chronic otorrhœa and even deafness; (8) purulent conjunctivitis, corneal ulceration and keratitis, styes form in debilitated subjects; (9) prickly heat, sudamina and herpes; and (10) vulvo-vaginitis, albuminuria may be found.

Sequelae:—(1) Bronchiectasis; and (2) predisposition to pulmonary tuberculosis.

TREATMENT:—The buccal cavity and the upper respiratory passages should be cleaned with an alkaline solution. In the young the following may be permitted to be swallowed.

Ŗ	Pot chloras		gr. x
	Acid hydrochlor dil		m x
	Syrup et aqua ad	***	3 i

Mft. Mist. 3 p may be given every 4 hours to a child one year old.

Immune therapy:—Five to six c.c. of serum from a convalescent patient in his 6th to 9th day of the drop of temperature if available is injected intramuscularly for prophylaxis and a larger dose for curative purposes. Placental extracts compound of globulins derived from the placenta and the blood contained in it from a healthy mother have also been used, 2 c.c. of concentrated serum is used for prophylaxis and 4 c.c. for treatment. To combat septic complications, antistreptococcic serum 10 to 30 c.c. is used parenterally. For laryngitis, diphtheria antitoxin 10,000 unit may be given.

Case report.—Case 1.—M., Hindu female child aged 7 years, was treated for coryza and swelling of the cervical glands, headache,

TEMPERATURE CHART I
Name: M. Age: 7 yrs. Disease:
Fever. Discharged: Cured.

nausea and vomiting, sneezing, running in the nose, cough and redness of the eyes. The fever rose to 102°F with turgescence of the face and prodromal rashes appeared as a blotchy erythema. The tongue was furred and the mouth and throat were congested. The fever rose to 103.8°F with a pulse rate of 140 and respiration rate of 50 p.m.; gradually it fell with defervescence (vide Temperature Chart 1). Her symptoms however, increased till the 4th day and little raised red spots came out on the forehead and face, which increased in size and number and formed into clusters. They then spread to the breast, abdomen, thighs The general symptoms and legs.

persisted up to the sixth day. Miliary vesicles and petechiæ were seen. Buccal spots were seen on a level with the bases of the lower milk molars on either side. After the rash faded, desquamation began. Tonsils and cervical glands remained swollen, the voice was husky, cough croupy and rightsided bronchopneumonia was noted on the 4th day.

TREATMENT:—The patient was put to bed and warm water, glucose D and orange juice were given to drink. A hot bath was

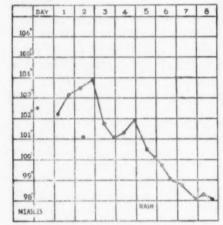
given daily for the rash to come out, also an enema to relieve constiption, antiphlogistine to the chest and steam inhalation with Tinc. Benzoin Co. given with a bronchitis kettle.

Ŗ	Sulphadiazine	,		tab
	Calcium lactas		***	gr. iii
	Euquinine		***	gr. 11

Penicillin G sodium 10 lacs dissolved in 5 c.c. water given I.M. one c.c. every 6 hours. An alkaline mixture was given t.d.s., the mouth frequently swabbed with boroglycerine. Patient was cured.

Case II:—S., Hindu, male child, aged 4 years, was treated for fever with rigor, coryza, headache, nausea and vomiting. The fever

TEMPERATURE CHART II.
Name: S. Age: 4 yrs. Disease: Fever.
Discharged: Cured.



rose to 102.4°F., pulse 140, resp. 30 p.m. (See Chart II). symptoms increased till the 5th day and the rashes appeared as little, red spots first on forehead and face and then spread to the breast, trunk, abdomen, thighs and extremities. The red spots increased in size and number and became clusters The general symptoms persisted with the occurrence of the eruption up to the 7th day. Buccal spots (Koplic's spots) were seen on the third day the tongue was furred and the mouth and throat were congested. Patient was restless: insomnia and intermittent delirium were present. Anorexia and thirst were

present. He had diarrhoea with 6 or 7 yellowish loose motions with mucus. Blood—showed no M.P. Aldehyde and Chopra tests and Widal test were all negative. W.B.C.: 8600 per cm.m.; stool contained no ova, protozoa or cysts. Hence diagnosis of Measles.

R (1	) Bismuth carb		gr. iv
	Pulv. Cretæ aromat with opio	***	gr. i
	Mucilage	***	q.a.
	Aqua ad		3 ii t.d.m.
(2	) Sodi citras	***	gr. vi

Cal. lactas ... gr. iv
Elixir Bromo-valerian Co ... m. xv
Syrup Tolu et Aqua ... 3 ii t.d.s.

Diet: - Eledon milk and barley. Patient was discharged cured.

Reference: -Gunn, W. - Br. Encyclopædia of Medical Practice, Vol. 8.

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#### A CASE OF SINUSITIS TREATED WITH TERRAMYCIN

S. K. GHOSH, L.M.F., A.M.O., Gariabandh, Raipur, M.P.

A MALE aged about 48 years, came to me for the treatment of the following complaints:—

Purulent discharge from the right nasal cavity—duration six months. Pain and swelling of the right maxillary area—duration 6 months. Inability to breathe through the right nostril for 5 months. Epiphora of the right eye for 5 months.

History of the present illness:—The patient stated that instead of drinking water by the mouth he used to take it through the nose for the last one and a half years without any difficulty at all, but during the previous six months he could not do so, as a result of the above complaints. To start with, the disease was insidious in origin with a slight watery discharge from the right nasal-cavity and a feeling of partial obstruction during respiration which gradually turned into a purulent discharge, pain on the right maxillary region, constant headache, complete obstruction of the right nasal-cavity and constant epiphora.

Local examination:—The right maxillary area and right eye lid were a little swollen while the former was painful to some extent. There was constant epiphora from the right eye. The whole of the right nasal-cavity was filled with a thick whitish brown pus and as its flow was constant even after proper-cleaning, the examination of the right nasal-cavity was not possible. The left one was quite healthy through which the patient could breathe without difficulty. All the molar teeth of the right upper jaw were absent and the condition of the other teeth was satisfactory.

TREATMENT:—After proper local anæsthesia with 2% planocaine solution, the right maxillary air sinus was irrigated externally with 2% tepid Dettol lotion. Through the inferior meatus of the nasal-cavity, about half an ounce of a thick whitish brown pus came out and the patient was given the following treatment:—

Penicillin 2 lac units every 4 hours I.M.
Sulphadiazine 2 tabs. 4 times a day.
Gluco-Fedrin (P. D. & Co.) nasal drops 3 times a day.
Hot Mag. sulph. compress over the right maxillary area 3 times a day.

On the next day the epiphora had disappeared but the other conditions remained unchanged. After continuing this treatment for 10 days with the evacuation of air sinus every alternate day, the pus became thinner and whitish but the nature of flow

remained the same while the other troubles were reduced to some extent.

Not satisfied with this prognosis, I had him X-rayed (vide X-ray picture). The X-ray showed a complete opacity of the right maxillary air sinus. Then the following treatment was prescribed.

P. Terramyein one capseal 250 mg. every 6 hours. Gluco-fedrin nasal drops 3 times a day. Irrigation of the air sinus every alternate day.

After continuing this treatment for six days no pus was found inside the air chamber and the nasal discharge was greatly reduced while the headache, pain etc. had all subsided completely. Examination of the nasal-cavity was now possible and it showed hypercongestion of the whole nasal-cavity with the presence of an ulcer on the septum and the patient could breathe slightly through the affected nostril. Glucofedrin was then replaced by penicillin snuff 4 times a day while the terramycin was continued as usual. The patient was completely cured at the end of 12 days.

#### Therapeutic Experiments in Female Infertility

The therapeutic value of uterotubal insufflation has been accepted by many writers because pregnancy has many times followed soon after the procedure. Admittedly, the possibility of psychological influence cannot be dismissed and true assessment of the method is no doubt difficult. Other procedures involving instrumentation of the cervical canal, such as dilatation of the cervix and hysterosalpingography, have been known for many years to be frequently followed by pregnancy.

A total of 1575 primary sterility patients were followed for 12 months, 893 after insufflation, 253 after the passing of a uterine sound, 286 after bimanual examination and 143 after starting injections of progesterone combined with estradiol benzoate. The pregnancy rates at the end of 3 months were fairly uniform (6 9 to 8 4%); at the end of the year the rates were respectively 17 4, 17 8, 10 8, and 19 6 per cent.—(J A.M.A., 148, pp. 603-605, 23-2-1952. Author's abstract in Q. Rev. Surg Obst. Gynaec., Sep. 1952).

#### The Treatment of Severe Nutritional Disturbances in Infants

Martischnig reports in the Annals of Paediatrics for September, 1952, his experience of the treatment of 125 infants, 67 with intoxication and 58 with severe enteritis. He considers that the pathogenic strains of B. coli, particularly the saccharose fermenters, and the strains of  $111.B_4$  and  $55.B_5$ , are the chief offenders. He used the antibiotics streptomycin, aureomycin, and chloromycetin, and also carried out sensitivity tests.

One hundred and twelve of the 125 children were cured and 13 died. The prognosis is unfavourable in children under 3 months, in those who received no or inadequate quantities of breast-milk and finally where a complicating concurrent illness co-existed. (Authors' Summary).—(Am. J. Dis. Child, 85: 1, 1953).

#### A Case of Sinusitis Treated with Terramycin S. K. Ghosh.



Vide page 428.



#### AN INTERESTING CASE OF LATENT AMŒBIC DYSENTERY

DR. HARIDAS DE,

Late Senior House Physician, Campbell Hospital, (Calcutta), Medical Officer I/c., Ballarpur Colliery Hospital, (M.P).

In the early part of August 1952, I was called in to see a Hindu male, P. G., aged about 40 years, complaining of severe diarrhoa, anorexia and swelling of the legs and weakness. His family history had nothing particular.

Past History:—He had never had any attack of dysentery. But once at the age of 38 he suffered from a severe type of diarrhoea for about 3 months. He never complained of any symptoms referrable to cardiovascular or genito-urinary disorders. His health was all along quite good and he was not given to drinking. But he takes tea and coffee twice or thrice a day as he has to work hard all day. He is of temperate habits. Country medicine cured him of the diarrhoea which he had about 2 years ago.

Physical examination:—Patient looks desperately ill. weak and anæmic. Tongue: dry and coated. Face: pale and puffy. Temperature: 99°F. Pulse: 100 p.m. Respiration: 26 p.m. Liver: tender on palpation but not enlarged. Spleen not palpable. Abdomen: tender on palpation. No mass in sigmoid colon. About a month back the patient had an attack of diarrhoa which continued despite treatment. For the last few days he noticed swelling of the legs up to knees. He was passing between 12 to 15 watery stools in 24 hours which did not contain blood and mucus. The patient had recently begun to feel weaker and to tire easily. His diet was not regulated during this period of diarrhoea. The lower extremities were markedly cedematous. Face was also puffy. He is not complaining of cough, dyspnæa or cyanosis. Heart-no abnormality could be detected. Heart sounds at the apex were normal. No murmur could be heard either systolic or diastolic. His weight was 130 lbs. and B.P. recorded by me was 140/90 m.m.

Examination of urine was negative. Due to want of laboratory facilities his stool could not be examined. So clinically I diagnosed it to be a case of nutritional ædema secondary to the chronic diarrhæa. I advised the relations of the patient to stop all undesirable diets that the patient was so long taking and advised them to give only soft rice and curds with sugar and plenty of juice from green vegetables. I gave him ordinary carminative mixture with liq. bismuth pepsin 3 i per dose every 4 hours alternately with the following powder.

R Salol ... gr. v
Dover's powder ... gr. v
Bismuth carb ... gr. x
Fiat puly, send three such; one t.d.s.

I gave him injections Folvite (Lederle) 2 c.c. every alternate day and Hæmatinic plastules with Folic acid (Wyeth) two capsules a day orally. With this treatment for 2 weeks the general health of the patient was much better and ædema of the feet also almost disappeared but the patient continued to pass between 10 to 12 watery stools a day. I then had a sample of stool taken and sent to Nagpur for microscopic examination. When the report thereon was received after 2 days, to my great surprise I found that active entamoebic histolytica, containing red blood corpuscles were discovered in the stool.

I then stopped all other medicines and gave him Enteroquinol (East India) 4 tablets a day alternately with Mist. olei ricini \$\frac{3}{2}\$ it.d.s. The patient was put on a diet of high protein and was given Threpten (Raptakos) and elixir vitamin B complex (TCF); with this treatment the patient's symptoms and physical condition improved greatly within 10 days I stopped enteroquinol after 10 days and gave him emetine hydrochloride (BCPW) gr. \$^{1}\_{2}\$ every alternate day for 10 days and gave him Siovina (AD) by mouth. After a course of emetine, I again sent his stool for examination and to my satisfaction it was free from either amæbæ or cysts of E. hystolytica. He is now quite all right doing his normal work and regularly taking Dussart's syrup (Grimault) as a pick-me-up.

Points for discussion:—(1) No previous attacks of dysentery and the stools did not contain blood and mucus. So I never suspected dysentery, though the possible causes for the diarrhea are carcinoma of the colon, ulcerative colitis, bacillary dysentery and amediasis.

(2) Enteroquinol for 10 days and a course of emetine cured the patient of amœbiasis.

My grateful thanks are due to Mr. G. Srinivasan, Manager, Ballarpur Colliery for kindly according me permission to report this case in the leading medical journal the Antiseptic.

#### For Shaking Down a Thermometer in Frequent Use

A piece of match stick about 1½ inches long is securely fastened with very narrow strips of adhesive tape at right angles to the upper end of the thermometer. This provides a very simple and quite effortless way to shake down the thermometer when the matchstick is twirled between the thumb and forefinger of each hand. This is convenient for the chronic patient at complete bed rest, who checks his own temperature frequently every day. It also insures against the possibility of the patient's swallowing the thermometer or the loss of the rectal thermometer within the rectal canal. The cross bar will support the thermometer in a narrow necked bottle of rectified spirit (70% alcohol is the most efficient strength for sterilizing purposes, thus preventing injury to the mercury-filled tip as well as undue evaporation of the spirit.—(H. O. Stilson, M.D., in G.P., Oot. 1952, Quoted in Cur. Med. Digt., Jan. 1953).

#### AN UNUSUAL CASE OF RETENTION OF URINE IN A NEW BORN BABY WITH PHYMOSIS

MAN MOHAN SINGH, L.S.M.F., L.T.M., M.O. I/c., Dispensary, Shaina (Pepsu).

A FULL-TERM male child was born to a primipara on 19-1-'53 at The baby did not pass urine or stools on that day. On 20-1-'53 at 4 p.m. the baby passed stools but not urine. During this time only a decoction of indigenous drugs such as 'Samp': Senna leaves; 'Amaltas'; 'Banafshan' etc. called 'Jammam Ghutti' (Birth Elixir) was being given to the baby. It is considered an excellent laxative and diuretic. It is the practice in these parts to give only this decoction to a new-born child for 3 days continuously, as it helps in clearing the mucus from the system. As the child had not passed urine even on 20-1-'53, the parents became anxious, they called me in to see the baby at 6-30 p.m. after consulting other local vaids to no purpose. On examination I found that there was complete phymosis and the urethral orifice was not visible but the baby was not showing any sign of distress and the bladder also did not appear to be full. I immediately performed the operation for phymosis but to my surprise, no urine came out on my cutting the skin open. I had previous experience of 2 new born babies in whom urine came out in forcible jets immediately on cutting the skin, and so I had assured the parents that the baby would pass urine during the operation. Anyhow I completed the operation and again assured the parents that the blocked passage had been cleared and the child would pass urine during the night.

Next morning the report came that the baby did not pass urine although he passed stools. I was perplexed as I could not make out the reason for the persistent retention of urine. I reassured the patient and gave 3 powders of the following:—

Per Hexamin
Pot. Citras

Ft. pulv. Sig.-To be given 3 hourly.

... gr. i

.. gr. i

And the baby passed urine at 5 p.m. on that day (22-1-'53.)

Discussion.—From the above, it is evident that it was not a case of retention of urine due to phymosis. It would have become more complicated, had there been no phymosis. It was just a coincidence that there was phymosis also. In this particular case, no other reason can be adduced except that the kidneys began to function late. Or perhaps this baby had not fully developed and the cloacal duct between the ectodermal and the entodermal cloaca caudal to urorectal septum might have persisted for some days more in this case between the rectum and the bladder or urethra. So the urine might have been passed mixed with the stools till the cloacal duct had closed.

Will any of the readers of the Antiseptic throw more light on the subject?

Reference: Gray's Anatomy.

#### Care of the Newborn Infants of Diabetic Mothers

Heck discusses the dangers for the newborn infants of diabetic mothers and the management of the mothers and infants. With regard to the infants 10 c.c. of a 25% solution of dextrose is administered by way of the cord and the infant is very carefully watched for 48 hours. Sugar is given by the rectum or perorally if possible. The administration is guided by blood sugar determination. Regulation of temperature by regulation of external heat is used. When necessary, oxygen is supplied; lobeline and epinephrine are kept in readiness. Intravenous administration of a 25% dextrose solution should be used only in an emergency. Two drops of epinephrine may be instilled into the nostrils every 2 hours. Regular feeding is given by about the 10th day. Heck found this regimen to work successfully in six cases. Caesarean section in the 36th and 38th weeks of pregnancy in diabetics is considered to be the least injurious to the infant.—(Deuts. Med. Wchnschr., 77, 1952, Abst. Am. J. Dis. Child, Jan. 1953).

#### Anuria Treated by Cortisone

The present trend in treating anuria is in favour of the use of a balanced fluid and electrolyte intake with a low protein diet, in the hope of securing a spontaneous remission. Methods of treatment based on the primary ætiology, such as decortication, nerve block (surgical or pharmacological) alkalization of the urine etc., are not often successful; this relative failure may be due to the presence of other unsuspected ætiological mechanisms.

An acute allergic reaction in the kidneys may be a causal factor in some cases. To test this hypothesis, Drs. Moore and O'Donovan of Dublin tried the effect of certisone in a miscellaneous group of 4 cases of anuria. The cortisone used was cortisone acetate ('cortone') and was administered by intramuscular injection (dosage ranged from 200 to 500 mg. in two doses in 24 hours).

"In two patients an allergic reaction in the kidneys, was suspected and both cases responded very satisfactorily, making a rapid and complete recovery; in one the allergy was attributed to an overdose of sulpha merazine; in the other, it was attributed to the sudden cessation of cortisone which was taken daily (100 mg.) for rheumatoid arthritis, and to the development of a sorethroat, pyrexia and rash; both factors preceded the anuria.—(Br. Med. J., 24-1-1953).

## TREATMENT BY B. A. L. OF EXFOLIATIVE DERMATITIS FOLLOWING ACETYLARSAN INJECTION

SUMATI SARAN BAGCHI, L.M.F., Medical Officer, Mogulkata Tea Estate, P.O. Banarhot, Duars, Dt. Jalapaiguri, W. Bengal.

THE patient, a young girl aged about 17, had hoarseness of voice for a long time and was advised to take Acetylarsan injections. When the injections were started, a few eruptions were seen on her body and she had also slight fever at night after the first injection. After the second injection, she had a high temperature and the eruptions spread more. Neither the prescribing doctor nor the attending doctor warned the patient or her guardians regarding any probable reactions of the medicine. All the children in the house had attacks of measles very recently and so these were also thought to be measles and were therefore ignored. But after the third injection, the patient had still higher temperature, severe burning sensation and pain, as also eruptions spread over the whole body. The patient now came under my treatment. Macules had turned to papules and gradually to vesicles. The skin all over the body, became red and swollen. She was given Ametox injections for two days with no effect; the patient became rather worse. By this time. there was serous exudations from the vesicles and an obnoxious smell was coming out of her body. Urine was very scanty and high coloured but contained no albumen. Patient was screaming in pain and agony day and night. She was then given B.A.L. (Boots) injections-one ampoule I.M.T.U. along with glucose solution with calcium I.V. in the morning and glucose solution with Celin Fort I.V. in the evening. Unfortunately, glucose injections could not be continued as it was not possible to spot the veins owing to swelling, redness and exfoliation of the skin. The patient developed irregularity of pulse and was given Coramine liq. by mouth. On the second day of B.A.L. injection, there was no improvement at all in the morning. But in the afternoon, the burning sensation seemed to be less. After the second day, no further eruptions appeared and ædema and redness of the skin began to diminish. Screams and agony were less and the patient passed a On the day following, the patient was definitely restful night. better. Temperature came down, she had no body ache, the skin began to shrink, the exudation became less and the flow of urine increased. After 12 injections of B.A.L., it was decided to give more of B.A.L. injections but were not given as the sites of injections were swollen, red and painful. Yet the patient had a steady convalescence and was given the usual treatment for exfoliative dermatitis in addition to vitamin B complex and adexolin by mouth, the liquid diet continuing. Normal diet was then given gradually.

It was lucky that there was no albumen in the urine up till now and the patient had quite a good appetite and relish for food

except on the few days at the height of the disease. The sites of injections of B.A.L. had to be opened and the frank medicine with its colour and smell came out along with a very small quantity of pus. The patient then regained her voice.

Points of interest in this case:—1. B.A.L. acted quite well in this case and Ametox proved to be useless. (2) There was a complete and continuous absence of albumen in the urine and there was no jaundice, nausea or vomiting. (3) The cause of the untoward result of the medicine was probably due more to idiosyncrasy in the patient than to a toxic dose. (3) Carelessness on the part of the physicians to warn the patient or her guardians of such probable untoward consequences with Acetylarsan led to such agony and suffering to the patient, entailing also great pecuniary loss.

I am grateful to Dr. Charn Bhusan Bagchi, M.B., for his most valuable suggestion to try B.A.L. in the treatment of this case and for his kind permission to publish this note.

#### If a little is good, is a lot better? Certainly not in Medicine.

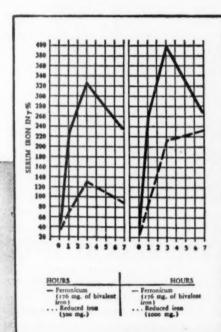
Many unthinkingly believe that one must constantly press his luck or overshoot the mark in order to achieve a better than perfect result; that in curing a fault, if a little is good a lot is always better.

While this inaccuracy is widely followed and exacts its measure of waste and disappointment, it is especially damaging when it invades the field of medical therapy. Here the problem is not that of the person eating more than is necessary, or overexercising beyond his capacity, or over indulging in the many basically faulty practices that have become popular custom. In these the individual follows his own bent and suffers the consequences. Rather is it one in which the unwary physician, ignoring his position as an authoritative guide, influences the many by prescribing and promoting the use of potent drugs with little regard for their own ill-effects. Most of the chemical and biological aids developed in the last thirty years are agents for ill as well as for good. All are two-edged, none are one hundred percent perfect. A certain number of people may be expected to react unfavourably to one or another of these agents. Precisely when and which ones will become the exceptions is impossible to foretell. All must therefore be suspects.

Skill in therapy, rightfully expected of every practising physician, involves constant awareness of risks as well as benefits and a careful reading and understanding of fine print. It is achieved only by a judicious balancing of the good versus the bad effects of every agent used. It is never acquired through practice by ear. It cannot include the specious reasoning that if a little is good a lot is bound to be better.—Det. Med. News quoted in West Virg. Med. Journal, Jan. '53).

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No. 6

## LANDMARK IN TREATMENT OF EYE DISEASES IN INDIA

THE first of May 1953 was a landmark in the history of the 130 year old Government Ophthalmic Hospital in Egmore, Madras. It marked the opening by Shri Sri Prakasa the Governor of Madras, of new wards providing additional accommodation to 90 more patients. Sri A. B. Shetty, the Madras State Minister of Health and Sri Dr. U. KRISHNA RAU, the Minister for Industries and Labour were amongst those present. This Madras Hospital is the second oldest ophthalmic hospital in the world and has a unique record of achievement of which both the Madras City and State may justly be proud. It has had a succession of Ophthalmic Surgeons who have become famous throughout the world and who have created a noble tradition which has been well maintained up to date. As the present popular Superintendent Dr. R. E. S. MUTHAYYA pointed out, there has been no addition to the bed strength since 1914, with the result that five hundred patients are normally housed in buildings intended for 170. Even the new wards now opened are housed in buildings diverted from the original purpose for which they were intended. The nurses, like the patients have been putting up with all discomforts and hardships for a good long while, and they have to wait still longer in view of the present utilization of the buildings for housing 90 more patients. The nurses have exhibited enormous patience and considerable self sacrifice which is really very praiseworthy. It is comforting to know that the State Government has accepted the proposal of the Superintendent for acquiring a neighbouring bungalow to house the nurses. He hoped that this building will be made available soon, but qualified his optimism by saying that to acquire it and carry out the necessary alterations and additions, it would cost Rs. 8 lakhs and he appealed

to the Government and the general public for generous contributions. We are not very sanguine however, that adequate help from the public will be so readily forthcoming as the Superintendent hopes; it is no doubt a sad commentary that institutions serving the blind and destitute helpless, make little or no appeal on the public mind. The Director of Medical Services, Madras, insisted that "the welfare of the blind is of great importance and humanity requires that the more fortunate ones should look after these unfortunates". As a local contemporary rightly pointed out in this connection "if humanity requires that we look after the blind, it imposes upon us all. Government included, the still more important duty of keeping God's creatures from going blind". The Director of Medical Services described a scheme for making eve treatment more widely available in the State. This scheme which is already functioning on a modest scale, consists of opening of ophthalmic departments in the District Headquarters Hospitals, wherever they do not exist at present, the starting of mobile units at Anantapur, Chittoor and Ramanathapuram, the base hospitals for these being located at Vellore and Madurai respectively. One way of checking eye diseases is to include eve inspection in the normal programme of medical inspection of school-going children, which unfortunately has itself not been properly conducted in most schools. As, nearly one half of the child population in Madras attend school, this would provide a means of treating the eyes of children, before eye ailments develop to serious proportions. The basic cause of more cases of weakness in the eyes-which predisposes to dysfunctions and disorders in them-is unfortunately malnutrition and deficiency of vitamin A in our dietary. are undoubtedly linked with the poverty of the general population. It is most essential that children are saved from the attention of quacks and irritant remedies applied thoughtlessly to their eyes. The State Minister of Health Sri A. B. Shutty, stressed the importance and necessity not only for having more clinics and eve hospitals but also for carrying medical treatment to the rural areas by means of mobile units.

The Madras City's famous old hospital, is so overcrowded that "even clothing and feeding the large number of patients is a matter of difficulty and obviously it is far from easy to keep the hospital and the patients clean. The bulk of the patients come from mofussil centres, in a condition requiring hospitalisation. It would be easy but heartless to turn them out and keep the hospital clean" said the Superintendent whose sympathy for suffering humanity has triumphed as indeed, it should have. Due largely to his initiative and enterprising outlook, the Madras Government Ophthalmic Hospital has become the pioneer in corneal grafting in cases of chronic glaucoma. It is also the first institution in India to start an Eye Bank where eyes are stored for corneal transplantation. The supply of eyes is unfortunately not plentiful and the operation itself is a very delicate and difficult one. To obtain an

adequate supply of eyes without any legal hitch or difficulty, the British Parliament passed the Corneal Grafting Act of 1952, which came into operation on 26th September 1952. This Act makes it possible to use the eyes of persons for corneal grafting after their death. The Act provides that "if any person either in writing at any time or orally in the presence of two or more witnesses during his last illness, has expressed a request that his eyes be used for therapeutic purposes after his death, the party lawfully in possession of his body after his death may, unless he has reason to believe that the request was subsequently withdrawn, authorize the removal of the eyes from the body for use for those purposes". Suitable provisions have also been included to govern cases of persons dying in hospitals, and of objections raised by near relatives of the deceased. It will take quite some time before the need for such an enactment becomes necessary in India, but it is wise however, to take even now a long range view in this regard.

The work done in the Ophthalmic Hospital in Madras deserves encouragement and the provision of better facilities for improvement. The workers in this hospital are keen and enthusiastic; there is ample scope for research and the material for it is abundant. Only facilities are lacking and opportunities are not readily available due to want of funds. It is the duty of the Government therefore, to provide these facilities and opportunities and make the latest methods of ophthalmic treatment available throughout the State. It is our firm conviction that the medical and public health requirements of the people deserve to be placed before all other considerations and programmes of development.

#### MANUFACTURE OF ANTIBIOTICS IN INDIA

AUREOMYCIN PLANT IN BULSAR—(BOMBAY) DEDICATED TO ITS INDIAN DISCOVERER, Dr. SUBBA RAO

WE are all aware that with the cooperation and assistance of the WHO and UNICEF, a large scale plant for the manufacture of Penicillin in India to meet the entire needs of our country, has been planned and will come into operation in 1954. The new pharmaceutical plant of Lederle Laboratories (India) opened at Bulsar near Bombay, on the 23rd May 1953, by the new distinguished American Ambassador in India, Mr. George V. Alley signalises the foundation of a modern pharmaceutical industry in our country. Speaking at the dedication ceremony of this aureomycin plant of the Lederle Laboratories of America, equipped with the most modern machinery that can produce 1,000,00 capsules per day (which will meet the entire needs of the Far East) Mr. George V. Alley said that India was on the threshold of a great and magnificent era, in which all the latest discoveries of science would

be utilised. India will soon be restored to her former pre-eminence as a source of healing drugs. For countless centuries, India was the source of most of the world's drugs and spices and the West has begun to repay its ancient debt to India "by helping you to regain your rightful place in this field" Mr. ALLEN said. This fifty lakhs of rupees worth Pharmaceutical Factory was dedicated and rightly so, to the memory of the late Dr. YELLAPRAGADA SUBBA RAO, the discoverer of aureomycin and folic acid. A plaque bearing the bust of Dr. Subba Rao and his motto "Science simply prolongs life, religion deepens it" was unveiled by the aged mother of the late Dr. Subba Rao. On the plaque is inscribed: "Dr. Yella-PRAGADA SUBBA RAO (1896-1948) Scientist, teacher, philosopher, Director of Research at Lederle Laboratories, America." Dr. BOGAN of the Lederle Laboratories, who was present, paid a glowing tribute to Dr. Subba Rao and said "his memory will be cherished for ever with those other great names in medicine who have advanged human race so much."

This new factory is the first of its kind in India to produce sealed capsules of aureomycin, thereby preventing tampering and contamination. Any safeguard adopted by manufacturing firms to prevent tampering and to stifle the now widely prevalent black market trade in used containers for vending spurious drugs, is to be welcomed in the interests of suffering humanity in India.

Mr. ALLEN pointed out that two things were essential to increase the number of ventures of this kind: "American interests must be convinced that there is reasonable chance of long term hospitality for their activities here in India and the Government of India and the Indian people must be convinced that they are not being exploited. Neither side is entirely convinced at present. The only way these lingering suspicions can be eliminated is through experience. When you are satisfied through actual experience, that cooperation with American enterprise whether private or public is in your interests then and only then will your suspicions be removed." Wise words well stressed. We have no doubt that both the Government and the public will take note of these sentiments of the American Ambassador so frankly and freely expressed.

The dedication of this industry to a great Indian doctor is a tribute to the humanitarian aspect of Indian and American cooperation. The Ambassador said that it represented the happy blending of techniques and financing on the one hand with an urgent and serious need and a large measure of local participation on the other. "It attacks a most ancient disease trachoma with the most modern weapons. I can think of no finer demonstration of international cooperation for a good purpose than this." A new drug factory is only an isolated example of Indo-American joint-venture. Negotiations we believe, are under way for the conclusion of similar

agreements with other private American firms. "So long as these are entered into on the basis of strict equality and negotiations are carried out freely without any pressure and with the sole criterion of mutual interests in mind, nothing but good will come out of such cooperative ventures" said Mr. Allen.

In India where amoebic dysentery and pneumonia levy a heavy toll of precious human lives, doctors have found aureomycin to have an almost "shot-gun" effect. Millions of clinical cases all over the world bear testimony to the fact that aureomycin sometimes works, where all other antibiotics have failed. In all, some sixty infectious diseases are successfully treated by this drug, and over seven thousand papers relating to its therapeutic uses have appeared in the medical literature of the world during the five years that have elapsed since its discovery in 1948.

We heartily share the great hope and satisfaction expressed by Mr. Allen, that 'wonder drugs' could now be produced in India on a large scale, and that both America and India would for ever remain free, and that scientists, scholars and technicians of both countries would always work together on the basis of equality, mutual trust and mutual self-respect to achieve joint efforts for mutual benefit and for the welfare of mankind.

#### SANITATION IN HOTELS

THE Madras State Government have at last accepted certain of the recommendations of the Hotels Sanitation Committee for the purpose of exercising an effective control over catering establishments. Other recommendations have not been accepted for financial reasons or on grounds of impracticability under the prevailing Personal hygiene and cleanliness are no doubt basic requirements, but under the conditions of modern life are not enough. It is essential that cleanliness should be practised everywhere and in every walk of life, and more particularly in two important spheres of communal activity; Cleanliness in the production, processing, marketing and distribution of food is vital and it is equally important that, for preventing and controlling communicable diseases, cleanliness should be insisted upon in all situations and places where people gather together. Not only hotels and eating houses, but also theatres, fairs, railway trains, trams, buses, aeroplanes and every other means of transport, bring together people from widely separated places and keep them in confined spaces, for often considerable periods of time. It is necessary that all conveniences for keeping clean should be provided to people who frequent these modern methods of feeding, enjoyment and transport.

The Hotel Sanitation Committee appointed by the Madras State Government in October 1950 made detailed inspections of

hotels and eating houses in Madras City and in a few mofussil stations; and it found that the kitchens were dark and dingy with no proper ventilation, the floors were littered with food scraps, peelings of vegetables and other rubbish. The store rooms were not kept clean and had no light or ventilation and the provisions there were left uncovered. So that they got mixed up with dirt, grit and incompatible ingredients. Plates, cups, saucers and glass and metal tumblers received a most perfunctory cleaning by a simple rapid immersion in tepid or cold water contained in a bucket (used several times over) and then wiped with the same dirty rag—an apology for a towel in use for hours and days on end! The cooking and drinking vessels were washed in water, previouly used for several cleanings without a change. Food handling and serving were crude and clumsy, and positively repulsive to the more discerning customers. Several other defects were noted and recorded by the Committee in their report. in order to bring to the notice of Government the deplorably insanitary conditions prevailing in all hotels. Amendments to the existing Public Health Act, were suggested to make its provisions effectively operative. The starting of model restaurants by municipal and other public bodies and farming them out to catering establishments was another of their recommendations, which if accepted would result in better control and greater efficiency in the working of hotels.

The responsibility of inspecting the degree of cleanliness in catering establishments and students' hostels has been left to the Public Health Staff. Unless these inspections are thorough, honest and of a genuinely surprise nature, there will not be much improvement in the present insanitary conditions. The Health Staff must focus their attention on absolute cleanliness of the kitchen, the ntensils and fittings and the manner of service of food preparations. The servers in hotels are none too clean; some of them may be and usually are carriers of disease; the Government accept the Committee's recommendation for an annual medical check-up of the servers, but instead of considering it 'essential and compulsory', they have stated in their order that such an examination is "desirable". We do not expect that this very essential salutary reform will become operative in the near future under this permissive legislation. The Government have recommended to local bodies that they should under their existing powers, take all measures for entorcing proper cleansing of all hotel utensils.

The Government have agreed to set up a Standing Committee to work out "desirable standards for the appraisal of sterilisation of equipment and utensils by bacteriological examinations". Much of the standard of sanitation in hotels will ultimately depend on the efficiency of cleaning the used vessels. Boiling water, or water to which a suitable and efficient bactericidal detergent is added will be the solution to this difficult problem. But unless the element of conscience is ever present in persons engaged in this cleaning process

in hotels, no amount of inspections or legislative or even punitive enactments will avail. This is again a matter of education and training of the hotel staff in the elementary principles relating to the causation and spread of epidemic and other dangerous diseases like tuberculosis etc. Hotel proprietors should be made to realise, their duties and responsibilities towards the public, who expect clean food and hygienic service. Neglect or violation by them of the rules should be promptly punished by immediate cancellation of their licences.

Another Standing Committee has been proposed and will probably soon start functioning to prepare type designs for buildings for housing catering establishments and it is hoped that hotel proprietors and persons who construct buildings with the express object of letting them out for housing hotels and restaurants should find these type designs quite helpful. In all matters therefore, which concern the cleanliness and hygienic management of hotels and eating houses, honest and sincere observance of essential social obligations by the hotel owners, hotel staff and inspecting officers, would alone make for healthy conditions being maintained at all times.

#### The Medical Profession's Obligation

Probably there is no relation in life which shows more clearly the lack of that equality which democracy implies than the Doctor-Patient relation. The young doctor just out of college soon realises that for every prosperous individual who is financially able to pay medical-surgical fees and the not unusual extra fees for consultations, anæsthesia, laboratory and X-ray services, there are large numbers, who for inevitable reasons, are not able to pay the entire cost of these services and still others who cannot pay any portion of the cost. The inability to pay the entire cost involves large numbers of our people when the illness becomes chronic and incapacitating, or when a long period for convalescence and rehabilitation is required to restore the patient to health and productive activity.

The financially able can ride out the storm. The very indigent can, and will be taken care of by the tax supported Department of Public Weffare, which may also provide certain emergency services for the non-indigent patients. Thousands of others will have some type of insurance benefits which will provide for the payment of short term acute illness requiring hospitalisation and other temporary services. When these benefits are no longer available, or when the non-indigent patient becomes medically indigent and can no longer pay the entire cost of these services the profession has an obligation which it cannot evade.

A friendly and human interest in the patients' problems will result in obtaining a knowledge of their ability to earry the burden of medical expenses. A downward revision of fees, including the doctor's fees, and fees for ancillary services and the utilisation of all community and county facilities locally available for Health Welfare and Allied Services for those in need of assistance will go a long way toward providing medical eare at a cost which the individual is able to pay.—(Margaret Loder, M.D., in Westchester Med Bull., 1952).

#### **ECONOMICS OF HEALTH\***

(The World Health Day Celebrations by AIR Madras and their significance)

Dr. T. S. TIRUMURTHI, M.B.C.M., Retired Principal, Stanley Medical College and Immediate Past President of Indian Medical Association, Madras.

On the 7th April, 1948, this child of the 'World Health Organisation' was born as a specialised agency of the 'United Nations', which itself came into existence after the last World War, the 'League of Nations' having been liquidated, as it failed to function to achieve the aims and purposes, for which it was constituted.

The World Health Organisation, which is known by its abbreviated initial letters as 'WHO', is based on the acceptance of the unassailable truth that the Health of all peoples is fundamental to the attainment of Peace and Security.

The Horrors, Devastations, Destructions, Impoverishment and Considerable Loss of Lives, of not only combatants but also the innocents, who had nothing to do with the war—women, mothers, children, the old and the infirm and the sick—that made the Nations who were parties to the war realise that the war did not solve any of the problems of the Nations but created additional and more difficult problems of poverty, starvation due to the scorched earth policy, destruction of houses and cities, want of food, want of houses and want of employment, in short destitution and despair.

It is a matter for sincere and deep thankfulness to God that good sense has at last dawned upon the war mongers and war-minded politicians of the World and to the few really good men of the World that the Nations should engage themselves in the future only to bring about and establish peace in the world. The godly men and really cultured men broadcast their conviction that "Peace can be won, if we work for it in the proper way." The members of the medical profession of the World, who are daily engaged in curing the sick and easing the sufferings of humanity, and whose hearts bled to see the horrors of the battlefield, to treat the maimed and decrepit and permanently disabled humanity, who are a liability to the nations concerned, and to witness the colossal waste of human lives, gave expression to their confirmed belief that the Future of Humanity lay in the establishment and maintenance of World Peace and World Unity. The World's Public Opinion was thus stimulated to get engrossed in "Waging Peace and not Waging War."

The realisation that health is one of the fundamental rights of every human being and that the health of an individual nation

<sup>\*</sup> A radio talk by the author, based on the subject matter of this paper was broadcast from the AIR Station, Madras at 9-15 p.m. on 7th April 1963.

cannot be achieved or maintained without the promotion and protection of health of every other state, neighbouring or remote, friendly or otherwise, and that unequal development in different countries in promotion and preservation of health and control of infectious and communicable diseases, including insect-borne diseases is a common danger to the world as a whole;—this conviction has been mainly responsible to bring about a legally constituted organisation like the WHO on an international basis on the 7th April 1948 with Dr. Chisholm as Director General. Its functions have been defined and are broad based.

To commemorate the auspicious occasion of the birth of the WHO on 7th April 1948 and to keep informed the peoples of all Nations of its fundamental aims and its progress and achievements from year to year, April 7th is celebrated each year as the "World Health Day".

The 79 countries, who are now members of the WHO, will celebrate this day as a Day of Rejoicing, a Bright Day in the History of the World; a Day full of future promise and possibilities, a Day sacred to Humanity, as it is intended to affirm that the Health of All Peoples is fundamental to the attainment of Peace and Security and to remind individuals and nations that the attainment of Peace and Security is only dependent on their fullest co-operation. It is also to gather informed opinion and active public co-operation, which are essential to the fullest attainment of health.

The WHO was established as a specialised agency within the terms of Article 57 of the Charter of the United Nations. It is only a five-year-old organisation. We have every reason to feel proud of its accomplishments within short so a period, through its various agencies and teams, in helping governments to fight disease and maintain health through its regional offices by promoting coordination and cooperation of effort in the 'War against Disease and Death.'

By helping Governments to plan their National Health Programmes, training Health Workers and supplying Technical and Trained Personnel, granting Feilowships to selected men and women from 73 countries to undergo training in special lines of Health work, in drafting International Sanitary Regulations to prevent spread of communicable diseases, in laying down standards for Biological Products and in the drafting of an International Pharmacopæia and of a Code of Medical Ethics—and in other ways, the WHO has done splendid work and should be congratulated upon its achievements.

The acceptance of the 'One World' Idea, the belief in the 'One and only God', the full faith in the Brotherhood of Man and Fatherhood of God and the conviction that you serve God by Service to Man and the full realisation, that what happens to one

may affect the many in a world, figuratively shrinking due to rapid and phenomenal scientific advances—all these have generated a great amount of dynamic good-will and created much "Enlightened Self Interest" which have inspired the Financially Fortunate and Advanced Nations not only to volunteer but also to consider it their duty to help the sister countries, which are less developed and less fortunate, owing to unfavourable circumstances into which they were and are placed and over which they had no control.

The WHO has to be helped financially for carrying out all its varied programmes and activities in under-developed, financially poor, and disease ridden countries. It should get a regular supply of funds with which it may frame its budget and execute its plans.

The WHO has been allotted funds under the UN Technical assistance programme to implement its health programmes, according to plan in conjunction with countries which receive assistance.

WHO co-operates in all health activities under the United States Technical Co-operation Programme, which is known as the Point IV Programme. WHO also co-operates in the Commonwealth Programme, known as the Colombo Plan and with all other international and national bodies.

With the International Food and Agricultural Organisation, International Labour Organisation, the U. N. International Children's Emergency Fund and other International and National Bodies, the WHO co-operates.

Through such co-operation and co-ordination, the vision of a tolerably livable and healthy world is each day being brought closer to reality, even though the WHO cannot establish a Heaven on Earth. But it can try to establish a Brighter, Happier and Healthier World than the world of to-day.

The WHO is constituted to promote the Health and Welfare, the Physical and Mental Well-being of the peoples all over the world, with particular reference to those of the undeveloped and underdeveloped areas. At present the WHO has given priority for the four important major subjects—Malaria, Tuberculosis, Venereal diseases and Maternal and Child Welfare. WHO has done good work to mitigate diseases and improve Health conditions in the (undeveloped and underdeveloped) countries, which sought its help.

It is a matter for great satisfaction that in India the WHO has set up a Regional Bureau with headquarters at Delhi and it is also a matter for great pride that we have been sending regularly a delegation every year to the Annual Conference and that till last year, India had a place in the Executive Committee of the WHO and Sir A. LAKSHMANASWAMI MUDALIAR, Vice Chanceller of the University of Madras and Legislative Council Member was the elected Chairman of one of the important standing committees.

In our own country WHO helped the respective states in the organisation of teams under the WHO experts' guidance to do antimalarial work in Wynad and Malnad and in certain areas in Malabar and Mysore. The splendid results of the work of these teams is well-known to the public.

Similar teams did good work in Assam and Uttar Pradesh. well known endemic areas of malaria. By the control of Malaria in Terai region, the area under cultivation has gone up by 40 thousand acres. This is a striking example to show that for increased production of food and other articles, money should be expended for the eradication of diseases and improvement of public health.

In the campaign against Tuberculosis, six demonstration centres have been established. Three of them are located in India. teams organised in these countries have carried out a vigorous B.C.G. Vaccination campaigns financed by the 'UNICEF' (United Nations International Children's Emergency Fund).

According to the latest available figures more than 12 millions have been tested for immunity to Tuberculosis infection and about 4 million persons among the non-infected have been given prophylactic B.C.G. Vaccination.

Yaws is a highly infectious disease. Though not common in India, it is widespread in many Asian Countries—Ceylon, Indonesia and Siam. Both preventive and curative measures have been taken by the Yaws Team and good results have been recorded already in this fight against the scourge.

Also Maternity and Child Welfare is receiving due attention

by the WHO.

The Central Government have now realised that our country cannot continue to be dependent on imports of essential drugs like penicillin and insecticides, like DDT. For the manufacture of the above two fundamental essential articles of modern need, plants have been set up with WHO's financial and technical assistance.

Colossal sums of money have been expended by nations in their wars against other nations. They are still spending huge amounts of money in armaments and in the production of engines of destruc-Researches in Science are being prostituted for baser ends. Higher values of life have been forgotten. Preaching Peace, nations are arming themselves to the teeth. Speaking of disarmament and establishment of World Peace and Social Security, politicians and governments are still increasing their defence forces and manufacturing poison gases, deadly weapons, atom bombs, H-bombs and other more destructive bombs secretly.

Moral Re-Armament movement is steadily gaining strength and popularity. Its appeal is irresistible except in the case of those persons, who are anti-social and stand to gain by war and who preach that wars have been fought ever since man came into the world and the history of mankind has been recorded, and that war is a biological necessity among human beings.

"One World, one God" was known to the ancients in India as the recorded saying of all her saints and sages. "Sarwejana Sugino Bhavanthu" is the prayer of every Hindu in the everyday poojas at home and in temples and on ceremonial occasions. Moral Re-Armament programme and propaganda naturally raise a sympathetic response among the Indian People.

Poor as we are as a Nation, we have hitched our wagon to the star. All organisations like the WHO., Moral Re-Armament, the U.N.O. and all the specialised agencies under it will be welcomed by us and will receive the whole-hearted support of the Indian people and the Governments, Central and State, and the Indian medical profession.

But it should not be forgotten that no one of the above bodies will try to take over the rightful role of governments in their attempts to establish a Welfare State. The WHO does not undertake any government's responsibility to do its duty by the public in fighting disease, mitigating human suffering, and maintaining health, through its own established ministries and departments, working under the respective ministers.

The WHO helps governments to train required personnel, plan programmes, help in organising service, supply material even if required for health propaganda, show methods found effective in other countries to formulate proposals, help existing agencies and aid in emergencies and in combating a particular scourge.

The WHO is able to render a multiplicity of valuable help because, by its international recognition, it can contact and requisition the services of experienced experts in every speciality from any

part of the world.

WHO is not a visionary organisation gazing at the stars of unattainable objects. Nor is it a missionary organisation founded on any religion. It does not say that it has a panacea or specific for all the World's ills. It does not work miracles. It is a body of wise practical-minded persons, whose eyes are focused on the highest standards of life which can be enjoyed by all, having in view at the same time the finances of the country concerned and its economic position in the comity of Nations. There is a Tamil saying that "a blind man cannot display the bright and powerful eyes of a King."

Therefore, the WHO knows that it cannot rush, when Angels fear to tread. It knows that in matters of food, health, housing, employment and higher standards of living, it does not pay to rush matters. It knows that it should not impose a health programme on an unwilling people and on unhelpful governments. It does not believe in imposing anything from above. It waits to see the results of educative propaganda on health matters, which will make people demand from the society and governments their rights to healthy living in sanitary environments.

The WHO has no wonder drug to cure all the ills of mankind or to maintain people in health. "God helps those who help themselves"; WHO helps those governments who promise and undertake to help themselves. As soon as the country concerned is able to look after itself and continue the work already started with the help and guidance of the WHO, the WHO withdraws to another field of health programme or to another country which calls for its help and advice. WHO is well aware that the people get only the government which they deserve and only the health which they have demanded and for which they are able to pay and in which

they are whole-heartedly willing to co-operate.

Realising the appalling mortality-total, maternal, child and due to various preventable diseases, which have not been prevented, and for which no serious attempts were made until lately, and knowing that the greatest indictment against the Pre-Independence Day governments were made, with reliable and incontrovertible facts and statistics, by the government-chosen experts, who sat on the Bhore Committee-our government has now come forward to do all in its power to control disease and prevent epidemics and improve the standard of health by increasing food production, better housing, and greater attention to environmental sanitation and by other means in a planned manner to bring about a Welfare State. The Central Government has welcomed the U.N.O. organisations and the WHO to advise, help and draw up policies and programmes for the improvement of health and the pre-requisites for the same-those which they can carry out through their own departmental organisations, and those which have to devolve on the State Governments.

I shall not detail or draw the picture of the depressing state of health conditions in India on this occasion and compare them with those obtaining in other civilized countries which became civilized long after India. The hitherto impediment to public health progress has been the inability on the part of medical officers of government to shape Public Health Policy because they Politicians and parliament and had no hand in the matter. assembly members not belonging to the medical profession, and non-medical Health Ministers still continue to shape the Health Policy and Medical Education. The Medical Council of India and the All India Medical Association are not consulted, except on unimportant matters and that too occasionally. They have no statutory standing in the Health Ministry and it is not incumbent on the Central or State Governments to seek the advice of these representative organisations of the medical profession in this country in the various committees-Food adulteration, Drug control, Spurious drugs, Pharmaceutical Industry, Registration of Medical Practitioners, Health Insurance and Health Education, Family Planning, Medical Inspection of Schools and Colleges, Medical Education, Medical Research and the like.

In this background of the country in 'the Lowest rung of the Ladder of Health and Wealth' among the World nations and in the neglect of the voice of the medical profession in the country by the States, Central and Provincial governments, the members of the medical profession will heartily welcome at least the advice of the WHO, for after all the medical profession of the world is one and India is a member not only in the WHO but also in the World Medical Association. If States and governments will not heed our advice, we have at least now the possibility to apprise the WHO and WMA of the vast health needs of India.

I express on behalf of the public its gratitude for all the help rendered to them by the WHO and feel hopeful that in the coming years we will receive increasing benefits from them. I have also a duty as the immediate past President of the Indian Medical Association to voice the feelings of the whole organised profession in India by expressing its gratitude to the WHO and to the Central and State Governments for their wholehearted co-operation with the WHO in their varied fields of work by providing funds for them.

Immense is the work of the WHO through its various departments and delegations, expert committees and exploratory committees. But where does the money for expenditure come from? UNO and UNICEF cannot meet all the demands involved in carrying out the costly health plans in the poor and underdeveloped countries. Manna does not drop from Heaven nor money rain from Heaven into the coffers of the WHO.

Charity does not flow for such purposes, which people generally consider is the look-out of governments who collect taxes. There are again persons who criticise the government that they waste money in top-heavy administration, and in impractical and improperly thought-out, hurriedly planned schemes and sentimental and whimsical plans of ministers and premiers. Such unhelpful criticisms will lead us nowhere.

We should realise that 'A Healthy Nation is largely a question of Money; and that like all good things of the world, Health cannot be had for the mere asking. 'Health has to be purchased with Money'. Cheap articles are flimsy and fragile. Cheap purchase of health is unthinkable. Good health has to be paid for at the proper valuation. It is not a commodity purchasable in a competitive market. We must 'Achieve Health or Perish'.

Health is the product of co-operative endeavour of peoples, communities, and nations. Health of the nations of the world is whole and indivisible. WHO realises that as long as disease is prevalent in any part of the globe, no nation, however high in the ladder of health standard, can be really safe.

A Nation must be Healthy to become Wealthy. It is only healthy nations that have become rich, economically independent and politically great powers. 'Absence of Health inevitably leads to Absence of Wealth in the Nation as in the Individual.' Judicious

expenditure of Wealth can create Health. These are all well known, oft-repeated, trite and true sayings. The day is gone when the accusation can be made that the medical and public health depart-

ments are mere spending departments.

Col. Russell, a former Director of Public Health in Madras, said long ago that 'in no sphere of human activity can richer dividends be earned than by judicious investment in the preservation and promotion of the Health of the People'. This truth has now been understood by all people who have sponsored the inception of the WHO.

The great Sydenham has said that the slightest reduction in the incidence of Sickness, Suffering and Death must always be a matter of greater felicity than the Riches of a Tantalus or a

Croesus.

Poverty is both the cause and the effect of Disease. Poverty breeds Disease and Disease flourishes Poverty. This vicious cycle must be broken at all costs and it should receive topmost priority in any State, which aspires to become a Welfare State. Without Health, the labourer cannot grow more, produce more, sell more and eat more and aspire for a higher standard of life.

It will gladden the heart of the public to note that last year the six member States of South East Asia have spent 5 to 6 million dollars in order to receive 4 millions dollars of aid through the WHO and that this year they will spend 4 million dollars and receive 10 million dollars worth of assistance from the WHO.

Long live the WHO and may it grow from strength to strength!

-By courtery of AIR Radios.

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'Sevagram', 1, Krishnamachari Rd., Nungambakkam, Madras-6.

## Long Continued Cortisone of a state and T. gland

In view of the necessity for continued medication with cortisone for patients with rheumatoid arthritis the following summary of an investigation by Boland and Headley, published in the U.S.I.S. Medical News Letter, will be

of interest

"The ability to sustain satisfactory improvement varied indirectly in general, with the severity of the rheumatoid arthritis. The chief detriment to better results in the more severe cases was the intervention of adverse hormonal side-effects, which developed frequently. Large or relatively large maintenance doses were required to support satisfactory improvement.

"Unwanted signs of hormonal excess developed in 40 per cent of the cases at the same time during the treatment. Most of them were mild or transient and disappeared or lessened when the dose of cortisone was reduced; but when this was effected the degree of improvement also often declined.

"During prolonged cortisone therapy, evidence of functional suppression of the adrenal cortices—as indicated by a decreased response of circulating cost nophils to exogenous corticorrophin—was present. However, the depression of cortical function was temporary. Whether irreversible damage may result when the drug is employed for longer periods cannot yet be answered."— (The Med. Press, 13-2-53).

## Gleanings From The Medical Press

#### MEDICINE AND THERAPEUTICS

The use and abuse of some new drugs in gastroenterology.—(Med. Ann. Dt., Columbia, 21:478, Sep. 1952 and Intern. Med. Dig., Jan. 1953).

"The two main classes of antacids are the soluble and the insoluble in acute or recurrent gastroduodenal ulcer.

"Soluble antacids have been used for many years in the past in the management of uncomplicated ulcer. Although neutralization of gastric acidity is ordinarily quite rapid and produces rather rapid relief of ulcer type pain, its action is usually not very prolonged. Prolonged use of these soluble antacids in occasional cases may cause a syndrome of pseudohypoparathyroidism. sionally, also, urinary tract stones may form in some individuals who have impaired renal function and especially if alkalosis is produced by prolonged repeated consumption of the soluble antacids. Still some favor the employment of soluble antacids in the management of acute gastroduodenal ulcer or of recurrent gastroduodenal ulcer, along with of course, other measures.

"Probably the most efficacious is precipitated calcium carbonate, because it does not, for the most part, cause alkalosis even when used rather constantly. There is also very little of the rebound rise in gastric acidity following its use in ordinary dosage. The therapeutic dose is in the range of 1 to 2 gm., administered as often as every hour or every 2 hours."

"All who have used the aluminum hydroxide preparations as antacids in the management of ulcer have experienced constipation and often fæcal impactions which are difficult to correct." It appears that the best solution to this problem is as follows:—

(i) "Instruct the patient to take hot dilute fruit juice (orange preferred) 3 or 4 times during the day mixing 2 or 3 ounces of the juice with 2 or 3 ounces of hot water.

(2) "Instil warm, heavy oil (mineral or vegetable) into the rectum every

second or third night, retain overnight. and expel in the morning.

(3) "If the patient is hospitalised, rectal examination at least twice weekly, especially during the first week of therapy, should be a must.

(4) "The use of aluminum hydroxide preparations to which are added magnesium compounds are often helpful in overcoming the tendency to constipation."

(5) "The patient should contact his physician if there has been no bowel movement in 2 or 3 days during the active treatment of the ulcer.

"It is probably best to withhold the of the administration aluminum hydroxide preparations during the period of an active bleeding ulcer, since it has been observed that an occasional bleeding ulcer patient given aluminum hydroxide preparations has developed intestinal obstruction, the cause being a bolus consisting of blood and the aluminum hydroxide. Intestinal obstruction has been caused by an aluminum hydroxide mass alone." gastrointestinal motor inhibition produced by banthine in man seems to be longer lasting and more pronounced than that produced by atropine.

"Blurring of vision and dryness of the mouth are quite frequent but diminish or even disappear as the drug is continued. Another fairly common sideeffect of banthine is in those patients with enlarged prostate. They will encounter difficulty in emptying the bladder. Banthine cannot be considered a cure for ulcer; banthine does not prevent recurrence of complications as has been claimed: Banthine does not always relieve the intractability requiring surgical treatment in patients with the chronic recurrent variety of duodenal ulcer."

The use of banthine alone in an acute or recurrent gastroduodenal ulcer which is uncomplicated will afford quite striking relief quickly.

There are many physicians who believe

that banthine alone is sufficient to control peptic ulcer symptoms. There are others who believe that the combination of banthine with sedative, other antacids, diet and rest is necessary in the control and healing of an ulcer...

"Tetraethylammonium chloride and bromide, both are substances which inhibit gastric function but their action is too short-lived and their side effects on blood pressure are too unpleasant for them to be employed as useful therapeutic agents in peptic ulcer. Hexamethonium (iodide, bromide, chloride) depresses gastric motility and mg. given subcuta. secretion; 100 neously may produce achlorhydria for a 3 hour period and reduction in gastric motility. However, side effects, especially on blood pressure, also tend to render it less useful as a practical agent in the management of uncomplicated ulcer at this time.

"Various synthetic resins (anion exchange resins) have been used as neutralizing agents and have been found to relieve pain and inactivate the pepsin of gastric juice, when given in adequate dosage (1 gm.). They do not seem to offer any great advantage over other antacids."

Protein hydrolysates have been emploved in recent years as antacids but as yet have not shown any great advantage over plain milk feedings in relief of ulcer distress.....Alkyl sulphates or detergents are substances which primarily inactivate pepsin without significantly affecting gastrio acidity ..... Therapeutic results have been disappointing. Side effects of epigastric burning sensation, nausea and diarrhos render the preparation intolerable by most patients". Preparations such as powdered duodenal mucosa and extracts from the stomach and also the small intestine have not given consistently good results.

"Sedatives are very helpful in acute or recurrent active peptic ulcer and are given at 4 hour intervals for 10 to 14 days during an acute episode. However, a small dose of a sedative on arising, at noon and in the evening is often helpful in reducing the tension of ulcer patients, to be given for several months after the manifestations of ulcer dis-

appear and at any time the administration of a sedative seems indicated.

The treatment of gravitational ulcers with vitamin E.—(Lee, M., in Br. Jour. Dermatol., 65:4, April 1953, pp. 131-138).

The treatment of gravitational ulcers of the leg with vitamin E, in the form of wheat germ oil was first reported in 1936, but was not enthusiastically pursued, though between 1948 and 1950, there were some trials made by Shute et al, Pritchard, Stritzler and a few others with varying results. Dr. Lee of the Prince of Wales Hospital, London treated 57 patients (55 men and 2 women) of ages ranging from 35 to 77 years, with a history of atleast 2 years' ulceration. He divided these into 5 groups :-(1) Large superficial ulcers. (2) Small punched-out ulcers over the malleolus, usually associated with varicose veins. (3) Ulcers associated with a brawny induration and ædema. (4) Small multiulcers associated with eczema. (5) Miscellaneous ulcers not coming under any of the above 4 categories. A scheme was adopted whereby Dr. Lee did not know which patients were on vitamin E and which were controls. Vitamin E was given as "Ephynal," a preparation (Roche Products Ltd.) containing synthetic d, l-alpha tocopheryl acetate. The dose was 400 mg. daily taken as 4 equally divided doses after meals. Control patients received dummy tablets of identical appearance. Full dosage was continued for one to two months after healing took place. The dose was then reduced to 200 mg. a day for a further 2 or 3 months. No sideeffects were noticed and there was no need to reduce the dose.

- (1) In nearly all the patients, whether on vitamin E treatment or on the control, the ulcer was completely healed in 3 to 4 months. Healing was however, more rapid in vitamin E dosed patients than in the undosed.
- (2) A rearrangement of the groups according to whether or not the patients had a history of deep venous thrombosis prior to ulceration, indicated a rather greater and statistically significant

degree of healing after 4 weeks' treatment in the vitamin E dosed patients compared with the untreated patients in the post-thrombotic group. In the group in which thrombosis had not been involved no significant difference was observed between dosed and undosed patients. In the present series, patients with post-thrombotic ulcers comprised nearly 45% of the total number of patients. It is suggested that vitamin E is worth trying as an ancillary to local therapy in patients with post-thrombotic ulcers.

The treatment of tuberculous effusions.—(From the Refresher Course for General Practitioners on 'Pleural Effusions' By Dr. Howard Nicholson of the Brompton Hospital: Br Med. Jour., 14-2-1953, pp 389-391).

DIAGNOSIS .- In . young persons, especially those between 15 and 25, tuberculosis is the commonest cause of pleural effusion. This occurs a few months atfer the onset of the infection by the tubercle bacillus, without any previous history of tuberculous disease. Usually there is no difficulty in diagnosing the condition. Pain is often present at the onset but the fluid accumuafterwards and may lates shortly occasionally develop without sharp pain. The patient is febrile from the very beginning, the fever lasting for 2 to 3 weeks; sometimes it may be still more prolonged. There may be a little dry painful cough, but only rarely is there sputum, or at any rate more than a trace of clear mucoid expectoration.

The aspirated fluid is clear, yellow in colour, and not blood-stained, may clot on standing and often contains many cells and lymphocytes. Occasionally there may be many polymorphonuclear leucocytes present or even predominating. Smears usually show no organisms, and cultures are sterile. Careful culture of the fluid for 8 or 9 weeks on special media shows the presence of the tubercle bacilli in a Guinea-pig large proportion of cases, inoculation may also be done. Other useful pathological investigations of value and help are, the white-cell count, which is usually normal or may show a relative lymphocytosis and the sedimentation rate which is often very high. If the patient has sputum, it should be repeatedly examined and cultured for tubercle bacilli, and a culture of the resting gastric juice may sometimes be done as well.

TREATMENT:—It is a long process. The main principles of treatment are alone described. Those who are ill or have a large effusion are best treated in hospital. Those in whom the illness is relatively slight and the effusion remains small, may be treated in their homes, provided home conditions are good. Those having active tuberculosis should be notified as such and the general practitioner should cooperate with the chest physician.

(1) Rest in bed:—This is the first essential of treatment, and many patients feel most comfortable when propped up with pillows. The temperature settles to normal levels in 3 weeks, but may remain raised for 6 weeks or longer. The patient should be kept in bed for 3 to 6 weeks after the fever has settled. He may then begin to get out of bed, if the fluid is diminishing in amount.

- (2) Management of the fluid :- It is not difficult in the case of small effusions. After diagnostic aspiration, it should be left alone and is nearly always absorbed completely in a few weeks. Patients with larger effusions should be treated in hospital, as further aspirations may be necessary. The cardinal indication for this is dyspncea. The usual practice is to aspirate without air replacement and because large aspirations produce pulmonary cedema, not more than 20 to 30 oz. are removed at a time. If more has to be aspirated. aspiration has to be done every day. Aspiration is also carried out when the fluid persists unduly long and also if fever persists.
- (3) Chemotherapy:—Though the above two procedures are adequate for most tuberculous effusions, some use streptomycin and PAS in addition. Certainly in very ill patients and in those with prolonged fever, the use of these drugs appears to be a valuable addition to the treatment.
- (4) Further management of the patient:
  -When the patient is able to get up, his

activity should be gradually increased until after about two or three months he is up almost all day. Walking exercises may then be begun and gradually increased, until 2 to 3 miles are reached at the end of a further month. It will usually take 6 months in most patients to reach this point. They may then return to work but do only half time for 2 or 3 months.

Radiography:—Radiographs of the chest should be taken throughout the period of treatment and the frequency with which this is done will depend on the course of illness; weekly films for the first 4 to 6 weeks and thereafter every month. These will show the steady diminution in the quantity of effusion and also any complications such as the presence of pulmonary tuberculosis or recrudescence of the effusion.

After care: -Although the immediate prognosis is good in so far as restoration to normal health, and disappearance of effusion are concerned, about 25% of these patients are found to have pulmonary tuberculosis within 5 years; so it is necessary to continue the observations for five years, with chest radiographs every three or six months during There can be no objection that time. to marriage, provided the patient understands that he or she is passing through a particularly dangerous period. It is perhaps wise to suggest a delay of two years or longer for very young women, to become pregnant, in order to avoid the period in which pulmonary lesions are most likely to appear.

Dr. Nicholson concludes by saying that a patient who has been treated on these lines and who is being kept under regular observation is not likely to be a source of tuberculous infection.

Studies in pre-diabetes.—(Br. Med. Jour., 27-9-1952).

"Coming events cast their shadows before; the woman destined to develop diabetes divulges her future fate, by producing infants which are dead or are large, by rapid obesity during pregnancy, and perhaps by over-lactation," writes Dr. Jackson of the Department of Medicine in the Capetown University

citing quite a large number of references from European and American medical literature in support of the above statement. The high fostal loss-rate and particularly the macro-infantia are applicable to pre-diabetic women in Africa.

The existence of a pre-diabetic state. is a relatively modern concept which has derived considerable support from the observation of abnormalities in the obstetric records of women who ultimately develop diabetes. Dr. Jackson in his article on Studies in Pre-diabetes. throws his weight in favour of the workers who have reported the birth of large babies, and a high feetal loss rate in pre-diabetic women, and who have found a number of undiagnosed diabetics amongst women who have had large babies or still-births. There can be no doubt, says the Editor of the B.M.J. that some factor operates in prediabetic women to cause over-growth of the fœtus and a high fœtal loss-rate for many years before clinical diabetes develops. Jackson mentions the popular hypothesis which claims that the over-growth of the fœtus and the subsequent maternal diabetes are both caused by an over-production of somatotrophin by the maternal anterior postpituitary. The fact that aeromegaly is very rare in the pre-diabetic woman would appear to militate against Jackson's hypothesis. The theoretical importance of the concept, is obvious and as Jackson suggests, it is poor consolation to the diabetic woman to know that she had passed through such a pre-diabetic state. There is obviously also nothing to be gained on the practical side, if we can do little to prevent the development of disbetes. But if an effective method of prevention can be discovered the recognition of the pre-diabetic state would gain considerable practical importance.

We know that certain circumstances e.g., the birth of large babies and a high feetal loss rate are premonitions of a possible diabetic future. To these we may have to add hydramnios and toxemia of pregnancy and if there is a family history of diabetes and the patient is obese the premonitions become virtual promises. Minor changes in carbohydrate tolerance are of doubtful significance, though Jacksen would appear

to consider them to be pre-diabetic. It will be necessary to search for other signs also which will increase the accuracy of our prognosis.

Jackson has made certain other observations also in respect of a series of pre-diabetic fathers, with the aid of suitable controls; he found that pre-diabetic fathers, beget big babies; this finding tends to destroy the complacency with which the mother alone has been blamed for the overgrowth of her fœtus though apparently she is alone still apparently for the high fœtal loss-rate. Further studies on the pre-diabetic father are therefore, necessary and it is hoped, will soon be made.

Pethidine and liver damage.—(Br. Med. Jour., pp. 703-4, 27-9-1952).

Detoxication of pethidine by the liver has been proved by the animal experiments of Bernheim and Bernheim (1945). Way, Swanson and Gimble (J. Pharmacol., 91, 178) who verified this statement suggested in patients with severe hepatic impairment the desired therapeutic effect of pethidine can be obtained with a smaller dosage. A review of the literature having failed to substantiate this view, Dr. Dundee and Tinckler of Liverpool, administered to four patients with liver impairment,

pethidine in divided small doses. (In one case they gave it as follows:during operation 100 mg., first post-operative day 100 mg., second day 200 mg., third day 400 mg., fourth day 200 mg.) It was discontinued on the 4th day, as the patient became delirious; and the patient (splenectomy) felt much improved the next morning. His subsequent progress was uneventful. The other cases also showed delirium and amnesia. even with small doses of pethidine. Cessation of toxic signs occurred with the withdrawal of the drug, showing that they were due to the pethidine, and that in the presence of liver damage toxic signs occur with therapeutic overdosage of pethidine. Pethidine has now a recognised place in anæsthesia. Patients with liver damage require much less pethidine than normal subjects to maintain satisfactory anæsthesia.

The average dose of pethidine during anæsthesia appears to be in the region of 25 mg. per half hour (Johnson, B.M.J., 1951, 2: p. 705). The larger the dose of thiopentone used for induction of anæsthesia, the smaller are the increments of pethidine required for its maintenance. The four cases here reported, support the hypothesis of Way et al that in patients with severe hepatic dysfunction the desired therapeutic effect of pethidine can be obtained with smaller dosage.

#### SURGERY

Conservatism in the surgical treatment of benign gastric ulcer.—(Surgery, 30, 1, pp. 256-268, 1952).

Wedge or segmental resections of benign gastric ulcer combined with a gastric drainage procedure were used for many years as the treatment for peptic ulcer of the stomach. This method was applied to a large percentage of gastric ulcers, as speedy simple and safe. Subtotal gastrectomy has however, now replaced the more limited resection technique and has been accepted by the majority of abdominal surgeons throughout the world, as the most satisfactory and successful treatment of gastric ulcer. The possibility exists that the addition of a vagotomy to the more conservative procedure may give equally as good

results without sacrificing a major portion of the stomach, and this possibility prompted, Dr. Wilkins and his collaborators, surgeons of the Veteran Administrations Hospital, Long Beach, Los Angeles, California, to study this problem from various angles.

Thirty two patients were selected for this study, as having ulcers of a benign nature, as ascertained by suitable tests. There were 30 men and two women in this series. One patient was in the 3rd decade of life, five in the fourth, eight in the fifth, fourteen in the sixth and four in the seventh decade.

Gastroscopic and contgenologic examinations were made preoperatively to diagnose and confirm benign ulcers. Gastric analyses were carried out in

28 of the patients, by the histamine stimulation technique.

Operative plan :- As one of the objectives of this study was to observe the result of vagotomy as an adjunct in the surgical management of gastric ulcer, various operative combinations were included :-(1) Wedge used, which resection and pyloroplasty in 9; (2) Wedge resection, vagotomy and pyloroplasty in 10; (3) wedge or segmental resection and vagotomy in 7; (4) wedge resection, vagotomy and gastroenterostomy in 4; and (5) wedge or segmental resection alone without vagotomy or drainage procedure in the remaining 2 of the total thirty two patients. If a vagotomy was done, it was performed first.

Follow-up studies from 2 to 30 months have been made in all of the 32 patients; 14 have been followed up for 18 months or longer. These studies, as far as possible, were carried out by having the patients readmitted to the hospital for gastro-intestinal X-ray examination, gastroscopic examination, gastric analysis, and clinical evaluation. One died of an unrelated cause, about 4 months after the operation.

Conclusions: - Approximately twothirds of the patients have had vagotomies in addition to conserative resection. In slightly over 2/3 of the cases a supplementary gastric drainage pro-cedure has been done as well. The most satisfactory immediate results appear to be in this group of wedge resections plus vagotomy combined with drainage procedure. One a gastric patient suffered from a doubtful recurrent ulceration, which healed subse-Another patient died from quently. an unrelated cause. A third patient, although showing no evidence of ulcer by X-ray or gastroscopic examination, had a poor subjective result. The remaining 29 patients followed from 2 to 30 months are living and quite free from ulcer symptoms. Most of them are enthusiastic over the results of their operation.

One of the primary considerations in the surgical treatment of gastric ulcer is the presence or absence of malignancy. This conservative approach offers a

solution to the problem with an opportunity to limit logically the extent of the operation in the presence of a benign lesion—and to extend logically too the scope of operation with appropriate extensive resection of the omenta and lymphatics and wide excision of the gastric tissue in the presence of malignancy.

Surgery of the heart: (Blalock—Taussig operation in 200 cases of Morbus cæruleus).—(Br. Med. Jour., 14-2-1953, Editorial and article by Campbell and Deuchar of Guy's Hospital, London).

The results of treatment of 200 patients suffering from congenital heart disease by means of anastomotic operations as described in 1945 by Blalock and Taussig, have been recorded by Campbell and Deuchar of Guy's Rospital, London. Probably over eighty per cent of the cases had Fallot's tetralogy and they benefited most by the operation. In this condition there is stenosis of the outflow tract of the right ventricle, sometimes of the pulmonary valve, more often below it in the infundibuium; the interventricular septum is patent, the opening lying in the upper part; the aorta is dextroposed, so that it receives blood from the right ventricle as well as from the left; and the right ventricle is enlarged. As a result of the pulmonary stenosis, not enough blood reaches the lungs. The aim of the operation is to increase the pulmonary blood flow by making an anastomosis between a systemic artery and one of the pulmonary arteries.

The patients treated were mostly children, more boys than girls. 75% of them were between 5 and 14 years old. The principal symptoms were cyanosis and breathlessness on exertion, resulting in a disability so severe as to prevent the child from walking more than a few yards. The diagnosis was made by clinical examination, combined with E.C.G., radioscopy and blood counts. Special investigations were sometimes used, which subjected the patients to discomfort and risk.

The operation performed on Campbell and Deuchar's 200 patients (129 by Dr. Brock, 57 by Dr. Holmes Sellors and 14

by Dr. Ian Hill) was, when possible, end-to side anastomosis of the left subclavian artery to the left pulmonary artery. Occasionally an end-to-end anastomosis was necessary, though it was less beneficial because the systemic blood then reached only one lung. Almost all the 200 patients have been followed up for one year and over, and some for over 5 years. Good or very good results were seen in 136 patients (68%) seventeen were improved; 6 were improved but died later, two from unrelated causes. 17 have shown no improvement and 24 died from the operation. Many of the patients now lead normal or practically normal lives, earning their living or attending school. In 11 patients anastomosis could not be done, as there was no suitable pulmonary artery.

Nearly all the 24 patients who died caused anxiety even during the operation and all except one died within 3 days of its completion. These figures will compare well with the figures of Belcher and Sellors who reported 70 cases with 8 operative deaths and great benefit in 42, and also with the large series of Taussig's 1000 cases with a 16% mortality and good results in 78 per cent, recorded in the Transactions of the Association of American Physicians, Vol. 64, 1951.

After an anastomosis is established, a continuous murmur can be heard, at the site of the anastomosis and the presence of this soon after the operation is often one of the best indications of success. The pulse pressure may be a little but not much wider as a result of the anastomosis. A thrill is unusual.

Clubbing of the fingers regresses but seldom disappears. Cyanosis becomes less; but it is nearly always still present after exercise and usually just visible at rest. The raised hæmoglobin falls approaching normal. The heart enlarges to cope with the increased work it has to do owing to the presence of the anastomosis. The heart enlarges fairly rapidly in the first month or so, and then remains stationary. By and large, patients with large hearts before operation do not do so well; and too large an anastomosis is suspected in patients whose hearts continue to enlarge after the initial increase: the onset of congestive failure is then a serious possibility. Symptoms improve immediately after operation and the main changes are usually established within a few months.

All patients have lost their radial pulse on the side of operation and blood pressure cannot be registered in this arm; there have however, been no more serious effects of devascularization. Horner's syndrome and minor cerebral thrombosis have been the only post-operative complications—both however, uncommon. No one has developed bacterial endocarditis, but five had cerebral abscess—a common event in the untreated disease.

These operations are now accepted as useful in treating isolated pulmonary stenosis but they can also be applied to many cases of Fallot's tetralogy, the commoner condition. The gratifying results of the anastomatic operation, reported by Campbell and Deucher is the longest series of operations so far published in England, confirm the reputation of this surgical procedure.

#### OBSTETRICS AND GYNÆCOLOGY

Pelvic pneumoperitoneum. X-ray appearance of normal female pelvic organs.—(Am. J. Obst. Gynaecol., July 1952; pp. 184–187).

Gershon-Cohen and Hermel describe a method of inducing a pneumoperitoneum to demonstrate the female pelvic organs. This might be done either transabdominally or by the transuterine route as in a Rubin test.

The patient is prepared by emptying the bladder and rectum. 500 to 1000 cc. of CO2 is injected into the peritoneal cavity. The patient is placed in a modified knee-chest position and films are made, angling the X-ray tube 20 degrees cephalad. Ordinarily, this gives excellent visualization of the uterus. ovaries, broad and round ligaments. Any disease process producing enlargement

or distortion of these structures might be more readily diagnosed by this method. (Author's abst.: for Qly. Rev. Surg. Obst. Gynaecol, 9:4, 1952).

Irregular vaginal bleeding.— (Refresher Course for G.Ps., B.M.J., 6-9-'52).

Donaldson, F.R.C S., Dr. Malcolm F.B.C.O.G., Consultant Physician Accoucheur, St. Bartholomew's Hospital, London, states that when a patient complains of irregular bleeding the first problem for the practitioner is to decide whether the condition is an abnormality of menstruction, (an upset of the endocrine function) or whether it is truly an "irregular bleeding" General conditions in which the vaginal bleeding is merely a symptom of disease not connected with gynæcology are not infrequently overlooked. Examples of these are acute leukæmia, pernicious anæmia, and, more rarely diabetes, typhoid fever, etc. Not only a local but a complete examination should be made to exclude the general diseases enumerated. A blood count and other tests may be necessary. A pelvic tumour, may rise up into the abdomen; the inguinal glands must be palpated. A vaginal speculum examination must be made under a good light. Sims's speculum is best, but the cervix may need a Fergusson type of instrument. The next step is bimanual palpation, and lastly a rectal palpation with a bimanual examination, which in some cases may give more information than the other examination per vaginam.

Conditions likely to be discovered are:—
(1) A large mass of fibroids or smaller ones may be felt. Normally the fibroids give rise to menorrhagia rather than to irregular bleeding, but when a fibroid becomes a polypoid in the uterine cavity, irregular bleeding may occur. A carcinoma of the body of the uterus may coexist and a fibroid may have changed to the sarcoma. The correct procedure therefore, will be to carry out a diagnostic curettage to exclude malignancy followed by a myomectomy or a total hysterectomy. Myomectomy is indicated when the uterus after the operation will be of value for child-

bearing. Fibroids seldom give rise to symptoms after the climacteric unless undergoing malignant changes.

(2) Endometriosis, particularly when situated in the overy is another condition which may give rise to irregular bleeding generally accompanied by pain. Bilateral cophorectomy is the best remedial measure, though in certain cases the condition can be satisfactorily treated by radiotherapy thus causing an artificial menopause.

(3) A simple polypus can be seen and palpated in the vagina. Although the polypus can be removed by twisting it off with a sponge holder forceps, it should be sent to the laboratory for sectioning as a few of such growths have proved to be malignant.

The most important of all causes of hemorrhage is the malignant tumour; but irregular losses which occur at the time of the normal climacteric, as a result of endocrinal disturbances, are to be considered abnormal by the patients until competent advice has been obtained Women should think of the menopause as taking place normally in one of three ways:—

(1) The periods get less and less; the intervals however remain unaltered.

(2) The loss each time is the same, but interval between the periods increases.

(3) A combination of 1 and 2.—This is the commonest.

(4) A sudden complete cessation of all menstruation. Floodings or irregular hæmorrhages at the menopause call for investigation as being an "abnormal change of life."

Malignant disease:—The peak of incidence is in the years 45 to 55, and therefore, any and every irregular bleeding though accompanied by hot and cold flushes and other menopausal symptoms must be completely investigated to exclude malignancy.

(1) Carcinoma of the cervix is the most common and is often diagnosed by seeing the growth or an ulcer on the cervix. Biopsy will prove the diagnosis, Also cervical and vaginal smears are the modern aids largely used in America, and only to a small extent in England.

(2) Carcinoma of the body of the uterus rarely occurs before the age of

40 and is commonest after the menopause. Diagnostic curettage will help in the diagnosis.

(3) Carcinoma of the vagina and vulva give rise to blood stained discharges; a tumour or ulcer may be seen on examination.

(4) Carcinoma of the Fallopian tubes is a very rare disease which gives rise to a blood stained discharge but is seldom diagnosed before operation.

There is an understandable temptation for a busy general practitioner to give the patient a prescription for some ergot or other medicine and ask her to come later if bleeding does not stop. Thus reassured the patient may wait for several months by which time an advanced growth may be obvious. It is perhaps wise for an overworked GP to send her to a gynæcologist; if however, he has the time, the following is a summary of the steps to be taken by him:—

(1) A careful menstrual history. If every woman could be persuaded to keep a diary in her bedroom for noting dates, the difficulty of obtaining an accurate history would be much less.

(2) Decide if the irregular bleeding is or is not connected with pregnancy.

(3) Decide if the condition is purely an irregularity of menstruation or is true irregular bleeding.

(4) Decide if the irregular bleeding is only a symptom of some general disease or is due to a local condition in the pelvis.

(5) If it is a local condition exclude the possibility of malignant disease.

(6) In the case of irregular bleeding never adopt the Asquithian motto "Wait and see".

Toxemias of pregnancy.—(Penns. Med. J., 55: 217-24, 1952).—Douglas et al review the results of their investigation carried out at the New York Lying-in Hospital and also in their own clinical experience and study. They studied the changes in the retinal arterioles in cases of toxemia in pregnancy and graded the vessels from 1 to 4. Grades 1 and 2 refer to different degrees of narrowing and spasm. Grade 3 includes hæmorrhage and transudate

and grade 4 indicates in addition the presence of papilledema. In severe preeclampsia the advancement of retinal arteriolar changes was correlated with the number of feetal deaths. In hypertension of the more advanced stage increased retinal spasm was an ominous finding with a very bad prognosis for fætal survival. The authors consider the frequent examination of the retinal vessels. for changes, will be of great diagnostic value and also assist in assessing the The terminal vascular bed toxæmias. in the bulbal conjunctiva was also carefully studied for vascular changes, both in normal and toxemic conditions and it was found that the severity of the toxemia could be evaluated therefrom. Decrease in kidney function is common in most cases of toxemia in pregnancy. Insulin, urea and p-amino hippurate clearances are significantly increased during most of normal pregnancy but tend to return to normal values near term. Urea clearance values at less than 100% of normal, during most of pregnancy, are now considered to point to a decreased kidney function. Near term however, urea clearance values as low as 70% may be seen to occur even in normal patients. Occasionally 24 hour urea clearances help to follow objectively the course of eclampsia or severe pre-eclampsia. Early detection and hospitalization are necessary. Treatment is symptomatic and consists of a reduced salt intake, bed rest, sedation, intravenous glucose and control of fluid intake. The weight, ædema, urinary output of albumin, kidney function and blood chemistry should all be closely observed and recorded. After viability, prolonged delay may lead to feetal death. Patients should not be palliated too long. Toxemia is an irreversible process and relatively early termination of the pregnancy yields more satisfactory results than inordinate delay and waiting -(Based on authors' own abstract).

Course of diabetes during pregnancy.—(Qly. Rev. Surg Obst. Gynaec., 9: 4, Dec. 1952, from Act Endocrin, 9: 342-64, April 1952).

Dr. Pedersen of the Rigshospitalet in Copenhagen records the results of his study of 205 pregnancies in 152 diabetic women, who attended the Lyingin department of that hospital. variations were seen in the course of diabetes during pregnancy, 67% showing exacerbation, 13% showing improvement and 20 per cent status quo in relation to the pre-pregnancy state. The alterations in the severity of diabetes take place at two typical periods reaching a peak about the 2nd to 3rd month and again about the 7th month. At the former period an improvement in tolerance, lasting for an average of two or three months, was commonly observed. The manifestation of this improvement is insulin coma, other insulin reactions, or an improvement in the degree of compensation. When a reduction in the insulin dosage is found necessary, it amounts to about 34 per cent. At the latter period i.e., the seventh month, there is often a decreased tolerance, which manifests itself as diabetic precoma, acute acidosis of a lesser degree or a necessity for increasing the insulin dosage. The decrease in tolerance requires an increase of insulin dosage to the tune of about 75 per cent, as compared with the dose administered immediately before the alteration in tolerance; this is the same for patients with and without acidosis. The individual increases in the dosage range from 4 to 88 I.U. The duration of this reduction in tolerance averaged 2 months. 50 per cent of the patients exhibited increased tolerance at about the 2nd or 3rd month of pregnancy. An ideal material of 20 patients showed that no changes occur in the average carbohydrate tolerance of the group during the last five to six weeks of pregnancy.

Diabetic pre-coma in pregnancy is characterized by a low blood sugar and by a rapid onset, once acidosis has developed. In 30 per cent of cases the precoma killed the fœtus. Characteristic of insulin coma, apart from the time of occurrence, was the absence of fœtal deaths. Exogenous causes were seldom responsible for diabetic or insulin coma.

#### OPHTHALMOLOGY

The use and abuse of ophthalmic ointments.—South. Med. Jour ,45: 1071 Nov. 1952 and Intern. Med. Dig., 62. March 1953).-Ophthalmic ointments are of great benefit in conjunctivitis, both the acute and chronic forms. solution forms of antibiotics, sulphonamides etc. provide the single treatment of choice in conjunctivitis. Ointments, are however contraindicated in conjunctivitis if there is a break or interruption in the corneal epithelium involving its entire thickness. Ophthalmic ointments are of special value in treating blepharitis, styes and chalazia and in infections of the lid margins, which should also be gently massaged. Ammoniated Hg ointment (2%) is very effective in clearing up infestations of nits and lice in eyelashes. **Epiphora** resulting from slight ectropion of the lower eyelid with eversion of the puncta, is relieved by a bland ointment with a gentle massage on the lower lid. Adhesions between the skin and underlying tissue which follow traumatic injuries or operations on the eyelids, also

yield to firm massage with an ointment.
Ointments are contraindicated in the following:—

(1) Abrasions and lacerations of the cornea, (2) abrasions caused by and resulting from the removal of foreign bodies in the eye; (3) burns which involve the corneal epithelium; (4) ulcers of the cornea; and (5) any operative procedure which interrupts the corneal epithelium, particularly following intraocular surgery.

Severe alkrgic manifestations of cedema of the lids; injection, chemosis and folliculosis of the conjunctiva are known to follow the use of penicillin ointments. Ointments deter the regeneration of corneal epithelium and used tubes of ointments are frequently contaminated with fungi or bacteria which may infect the eyes instead of curing the condition.

It has been shown by actual tests that only a small portion of the active ingredient of the drug is in solution form, while the major part of the drug is in crystalline form in many ointments. Many patients complain of a scratchy feeling in the eye, following the use of an ointment after abrasions of the cornea. The small undissolved crystals produce punctate staining areas in the corneas, and might be responsible for the development of corneal ulcers.

It is common practice to instil anæsthetic ointments in the cul-de-sac after removing foreign bodies or abrasions of the cornea. In such cases the eye is usually not bandaged and the patient is thus allowed to have an unprotected, an æsthetic cornea, which is more liable to injury being devoid then of the protective mechanism of sensation. Exposure keratitis may result. A dressing is necessary to protect the anæsthetic cornea and to hasten epithelial regeneration.

An anæsthetic ointment should never be given to a patient for self administration. In cases where severe pain follows the abrasion of the cornea, the removal of a foreign body, or scrubbing the cornea with Tinet. Iodii, it is better to bandage the eye and give sedative and a drug for the relief of pain than use an anæsthetic ointment. In the hands of the patient, an anæsthetic ointment has a more potential dangerin that it will find its way into the family medicine chest and be used to treat other members of the family having pain due to any cause. The symptoms may be relieved but some other condition may crop up and be neglected for many days before a physician is consulted.

Ointments are frequently used to produce miosis and cycloplegia as they are believed to produce a more sustained and effective miosis or cycloplegia and to be easier to administer to children. But actually ointment forms of such drugs are no more effective than when used as drops, and instilling an ointment in a child's eye is just as difficult or even more than instilling drops. Atropine ointment is known to have produced atropine poisoning of varying states in children.

It is the opinion of many doctors that the systemic absorption from ointments containing eserine and prostigmine is greater than when they are used in solution and the local effect to the eye is no greater than when used in solution. The effectiveness of the solutions is actually increased when a wetting agent is used and the solution is allowed to flow from above downward, across the exposed cornea. The drops are therefore, to be preferred for miosis and cycloplegia, as the systemic absorption is less and as they offer a safer and more desirable method.

Dozier and Renken stress that "ophthalmic ointments should be used in the proper fashion, when indispensable in ophthalmological practice, and that however, in certain conditions they can be detrimental rather than beneficial."

Results of cortisone and ACTH therapy in eye diseases.—Qrly. Rev. Ophthalmol., 8: 77-86, June 1952).

Berens and Bickerton treated 1162 cases of various ocular diseases using ACTH and cortisone. They conclude :-(1) Rapid and consistent responses occur in acute inflammatory conditions of the eye, by controlling the inflammatory and exudative phase of the disease. The cause of the disease is not removed by these hormones, and so specific therapy for that should be carried out. when indicated. (2) Beneficial but variable results are noted when ACTH and cortisone are used in chronic conditions of the eye; no favourable response is reported from their use in degenerative diseases of the eye. (3) Acute. self-limited disorders of the eye respond well to the systemic use of these hormones. (4) In inflammations of the anterior ocular segment, topical administration is to be preferred. (5) The subconjunctival administration of cortisone is effective in some inflammations of the posterior segment of the eyeball, especially in the acute and subacute lesions. (6) The value and beneficial effect of ACTH and cortisone are greatest in conditions where allergy is a factor in the causation and development of eye

#### NEUROLOGY AND PSYCHIATRY

Death during treatment of psychiatric patients.—By the Hon'ble W. S. Maclay, O.B.E., M.D., F.R.C.P., D.T. M. & H., D.P.M. (Proceedings of the Royal Society of Medicine, January 1953, pp. 13 to 20).

In this, his presidential address, the author makes an appeal to the doctors in general and psychiatrists in particular, (since they deal with patients incapable of making their decisions) who are actively engaged in relieving human suffering not to be over-enthusiastic but to arrive at a right decision as to the best treatment for their patients need. A careful study of the death register for psychiatric patients, for the last 54 years (1947 to end of June 1952) reveals 329 deaths directly attributable to the treatment given. 180 deaths were due to leucotomy, 67 to convulsion treatment (including electro-narcoeis) 44 to insulin, 13 to ansesthetics, 8 to continuous narcosis, 6 to malaria treatment, 6 to surgical operations, 3 to intravenous injections, 2 to drugs for epilepsy and none to psycho-therapy.

1. Electric convulsion treatment: -The perceptible increase in the number of deaths from year to year suggests that increased experience in administering E.C.T. results in increase in deaths. Probably it is due to a greater boldness on the part of the doctor using it on patients unsuited to go through it. 35 deaths out of a total of 62 were in persons over the age of 55 years and only 6 were under 35. Causes of death after E.C.T. with postmortem findings, the possible mechanisms of fatalities with special comments on some of the deaths are next discussed. The cases cited show that irreversible cerebral damage is caused by E.C.T. In some of the cases, pre-medication of the nature of relaxants causes death. Relaxants should be used cautiously especially, in cases with cardiac complications.

 Electro-narcosis:—Was responsible for 5 deaths but the postmortem findings throw no light on the mechanisms involved.

3. Leucotomy: -2% (approximately) of the operated cases died of leucotomy, (180 out of 9000 operated cases).

The main immediate danger of the operation is hamorrhage. Advances in the technique and knowledge of the leucotomy procedure may be made only if trained and skilled neuro-surgeon's apply their minds to the problems of leucotomy. Attention is drawn to 3 psychiatric cases who committed murders after they were leucotomised. It is possible that leucotomy may have influenced their conduct.

4. Insulin:-Out of 44 deaths 36 were under the age of 35 and only 2 over 55 years. Skilled supervision may avoid complications. It is desirable for the doctor to have an idea of the personality make-up of his patients before they are put on insulin treatment. 13 deaths were caused by irreversible coma, 7 of epileptiform convulsions, 7 of acute pulmonary cedema, and 5 of cardiac failure.

5. Continuous narcosis:—7 deaths out of 8 occurred in patients between the ages of 25 and 45 years. Strict and unremitting medical care and nursing throughout the treatment may reduce the number of deaths.

6. Deaths from malaria treatment, anaesthetics etc.:—13 deaths from anæsthetics are suggestive of risks of deaths even in minor procedures, for the 13 include operations for incision of a whitlow, removal of toe-nail, lumbar puncture, etc.

7. Psycho-therapy:—Though no deaths have been reported as due to psycho-therapy, the danger of analytical treatment in unskilled hands, or in inappropriate cases cannot be under-estimated.

The author concludes by saying that though these empirical methods of treatment are not free from mortality, their benefits far outweigh the disadvantages. But they are to be used with due consideration of the needs and personal problems of the patient.

The effectiveness of these physical methods of treatment may be assessed by comparing the death rates among treated and un-treated groups of patients. (1) The findings of Slater and Kargulia (1950) are suggestive of deaths in untreated patients about 8 times

more than in the treated group of patients. (2) The value of E.C.T. in preventing suicides is recognised by various workers. (3) In the group of patients studied by Prof. Polonio of Portugal (1950) a death rate of 13 5 per cent was recorded in those who were treated with insulin and E.C.T. whereas a death rate of 31.9 per cent in those who were not under this form of treatment. (4) Following the introduction of malaria treatment deaths in Mental Hospitals due to G.P.I. dropped from 1353 in 1923 to 164 in 1948.

Clinical significance of starvation and oral deprivation.—By Drs. Joost A. M. Meerloo and Leo. D. Klauber, (Psychosomatic Journal of the American Psychosomatic Society, November and December 1952, pp. 491-497).

A doctor who is acquainted with the paychological changes brought about in human beings due to starvation in times of famine will appreciate behavioural changes in a few of his medical and surgical patients subject to oral deprivation and restricted diets and readiust his treatment procedure accordingly. Doctor Joost A.M. Meerloo's study of human reactions to starvation while working in a Red Cross Feeding Team in Holland in 1945 forms the main subject matter of this paper. Personality changes following prolonged starvation cannot easily be overlooked. In Western Europe, famine conditions prevailed in the worst form from 1941 to 1945. By the beginning of 1945 the daily intake was estimated to be between 600 to 800 calories per individual. Undesirable changes in the behaviour of the adult population were characterised by hyper-egoism, antisociality, affective impulsiveness, seclusiveness, hysterical and hypochondrical reactions with enuresis. In children coprophagy came back. About 3% of a population of 4 million were in the worst phase of starvation. Something like 4420 deaths, from hunger occurred in the cities of Amsterdam and the Hague in the first half of 1945. The remaining 97% of the population suffered from a lesser degree of undernourishment with hunger cedema and other symptoms. Worst cases of hunger ædema were found mostly among the poor families. In the last phase of extreme apathy all kinds of cataleptic symptoms were observed in them. People were weak and starving and their sustained immobility made them appear almost cadaveric. Gross changes occurred in their eating habits. People chewed less, attacked and devoured their food directly-a regression to primitive food patterns. People liked to eat sharp spices. Drooling and keeping food in the mouth as babies do for a long time before swallowing it were also observed. Smoking became a substitute for food. A large number of children began to smoke. All kinds of taboos became less valid. In some concentration camps, cannibalistic actions were seen.

Many of the symptoms found in otherwise healthy but malnourished individuals are also found to accompany oral deprivation of food in medical and surgical patients. It is not uncommon to see a calm and co-operative patient becoming irritable and uncooperative after the operation. Instances of such patients wetting the bed, smearing the person or the walls with fæces are not rare. They sometimes make unreslistic and infantile demands also. Apathy and a masochistic surrender to fate occur not only in persons during famine. but in post-surgical patients, in cardiacs and hypertensives who are put on rigorous diets. Such patients may develop psychological symptoms which in turn may aggravate the disease or paralyse the wish to live. It may also complicate the surgical after-treatment. In all such cases the understanding physician who is aware of the frustrated oral cravings of the patient, by effecting a compromise, by giving sweets, and by sympathetic care and attention by the nursing staff, may combat most of the symptoms. Two cases are described for illustrative purposes :- (1) that of a coloured man after an operation for rectal carcinoma and the other (2) of a woman with hypertension. In both of these cases oral administration of some form of food were effective in allaying suspicion and fears, decreasing irritability and lessening inordinate demands. Aggression, guilt and cataplexy.

—Max Lenin, M.D. New York, (Archives of Neurology and Psychiatry, Vol. 69, November 2, Feb. '53, pages 224-235).

In psychosomatic medicine, cataplexy, a symptom of narcolepsy, is an illuminating example of paralysis of voluntary movement induced by emotion. In most psychosomatic medicine, we deal with chronic situations. For example a man hates his boss and reacts with peptic ulcer. On the other hand, cataplexy provides a chance to study acute reactions. Sleep attacks and paralytic attacks occur in fully developed narcolepsy. Sleep and cataplexy are not isolated happenings. Sleep may be preceded or followed by paralysis. In cataplexy and sleep paralysis, the victim is powerless while con-

In pre-dormitial paralysis the motor centres succumb to inhibition in advance of the rest of the cortex. In post-dormitial paralysis, though the inhibitory spell is lifted from the rest of the cortex, it is still lingering in motor centres which need a little more time to shake the spell off. These facts taken together show that the paralytic attack like the sleep attack is an inhibitory phenomenon. In sleep it is all, or almost all of the cortex that lies under the inhibitory spell, in paralysis it is only the motor cortex.

The example of a narcoleptic soldier who was about to fire at a man out front, when in the nick of time he learned the man was from his own side, whereupon inhibitions came into play and stayed his hand and he collapsed in a heap, is quoted. One must turn to the works of Pavolv on cerebral inhibition to understand the pathogenesis of narcolepsy. Amongst the four methods of producing inhibition, the significant is that of conditioned inhibition. Pavolv observed some animals responding to the inhibitory combination by falling asleep. Hence sleep and internal inhibition refer to one and the same thing; sleep being inhibition that has irradiated over enough cortex to wipe out cons-

Cerebral cortex is a dynamic structure with areas of excitation separated by areas of inhibition. Excitation and inhibition oppose each other. With the help of several case records the theme is developed that when a man is about to give vent to aggression for which he feels guilty and which he therefore strives consciously or unconsciously to suppress, he responds with cataplexy. The well known example is that of the angry parent being supervened by cataplexy when he raises the hand to strike his child. It is as the result of the struggle in the motor centres of the angry parent. Both excitation and inhibitions seem to be in charge of the show. Several other instances are quoted to show that acute hostility provokes cataplexy. It is not surprising that many cases of narcolepsy arise in a setting of chronic hate and resentment.

Hunting and fishing provide many examples of narcolepsy. These involve aggression and guilt. Cataplexy overtaking an individual while boxing, snow balling, playing chess, billiards, base ball, foot-ball and tennis are described in detail. Players feel guilty when they beat a competitor even in sport, for victory gratifies their unconscious hostile wishes. A winning play fires the hostile impulses and sets the stage for conditioned inhibition and cataplexy.

The mechanism of cataplexy on laughter is also explained on the principle of hostility. But why laughter that is not hostile should evoke cataplexy, is a mystery.

Report on electric convulsive treatment of 102 long-term schizo-phrenic patients.—(Am. J. Psychiat., 109: 439-443, December, 1952).

Fergus reports, the results of the treatment of 102 hospitalized long-term schizophrenics with electric convulsion therapy. Patients were male veterans from 24 to 47 years of age who had been ill for periods of from 18 months to 15 years, observed by the author for 15 months. At the beginning of treatment these patients could be described as classical chronic schizophrenics of various diagnostic subtypes requiring constant hospital supervision, and presenting definite management problems.

Treatment was administered with a conventional ECT machine with the glissando technique, every treatment resulting in a grandmal reaction. Overactive, disturbed, and markedly regressed patients were started with the daily multiple method: 3 treatments the first day, 2 the second, 1 the third, and continuing with 3 times a week. All others received 3 treatments per week. Treatment began to taper off between the 12th and 30th administrations according to response Through trial and error the frequency needed to maintain each patient in an improved condition was established. Sixty-six have been kept on maintenance; 36 have not. Various medications were administered to combat such difficulties as overanxiousness, nausea, respiratory distress or prolonged apnœa. All patients continued the same treatment schedules as prior to ECT. No formal individual psycho-therapy was done. Each patient was evaluated at regular intervals. Seven attended group therapy sessions after improvement was established.

Tabulation of results shows that 8 were released; 8 are expected to be released; 35 showed marked improvement in behaviour and psychotic manifestations; 20 showed marked improvement attitude and behaviour; and 31 are unimproved. Although there appears to be some relationship between length of illness and improvement, neither long duration of illness nor diagnostic subtype should be considered a contraindication to ECT. The author believes that very often the failure of ECT is due to premature discontinuance. The average in this series was 49 treatments. No complete cures were effected, but outside adjustment for those released, and ward adjustment for those still hospitalized, have been greatly improved. Morale of both patients and personnel has shown favourable change -(Dig. Neur. Psychiat., Jan. 1953).

## REVIEWS OF BOOKS AND PERIODICALS

The Licentiate—(Amballa Cantt). The Special Annual Number of this Monthly Journal, marks the commencement of the 3rd year of its useful existence in the world of medical journalistic literature: For two years the journal has done good service and catered to the needs of the profession loyally and devotedly. The Editorial board comprises medical men of experience and integrity who are experts in their specialities. The special feature article

in the present number, by Dr. J. W. Field, Director of Medical Research in Malaya, on the contribution of Malaya to the advancement of medical knowledge in regard to malaria, beri-beri and typhus constitutes one of the high lights of this special issue, which contains also other very interesting and instructive articles on a variety of subjects. We wish the journal a long and useful life.

#### BOOKS RECEIVED

The following books have been received with thanks since 15-5-'53 and the courtesy of the Publishers in sending them is acknowledged. Reviews will appear in due course.—ED.

 "Studies in Pediatrics"—By Dr. A. V. S. Sarma, M.B., B.S., D.C.H., F.D.S., The Antiseptic Press, Madras-1, 1953.  "The Surgical Appendix"—By M. V. Bhajekar, M.A. (Oxon.), M.B. B.ch. (Oxon), F.B.c.s (nd.), The Indian Journal of Medical Sciences, Bombay, 1953. Price: Rs 5.

"Ophthalmic Medicine and Surgery with Sight-testing"—By Dr. M. A. Kamath, M.B. & C.M., The Kothari Book Depot, Bombay-12,

1953. Price : Rs. 12.



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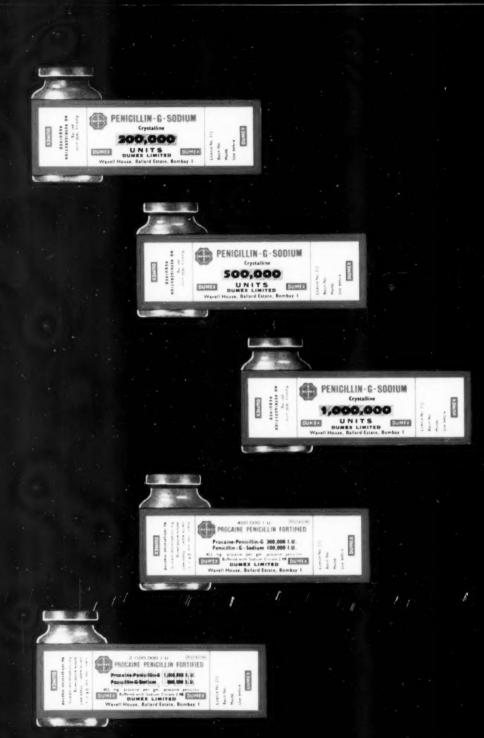
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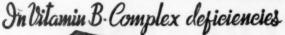
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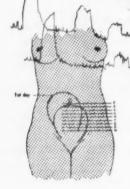
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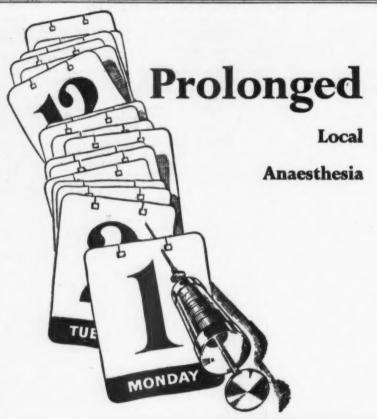
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P.D. Chloromycetin 12can 17.0	H
liquid 60 co 14.0	H
P.D. Chloromycetin 12 cap 17-0 p. 1 liquid 60 co 14-0 p. Camoquin 3 tab. 0-11-6 p. Abedec drop 15ce 5-12	J
Abedec drop 15ce 5-12	B
., Liver Ext. 2 USP 10cc 3-12	J
Liver Ext. 2 USP 10ce 3.12  5 USP 10ce 7.12  Combex 10ce 6.8  Quinine Sulph Jap. 35.8 Hew 53-8 lb.  Jap. loz 3-0 , 4-0 oz.  Sulphate plain 2gr 100 tab 2-4  Bisalph Hew 5gr 1400 , 60-0  Bibydrechler 2gr 100 , 2-12  , 5gr 100 , 5-10  , 15gr 2cc 50 amps. 5-0  , 5gr 12 tabs How 1-0  Bibydre 100 x 2cc	1
Combex 10cc 6-8	A
Quinine Sulph Jap. 35-8 How 53-8 1b.	J
" "Jap. loz 3-0 " 4-0 oz.	1
" Sulphate plain 2gr 100 tabs 2-4	A
" , , 6gr 100 ,, 4-4	S
"Bisalph How 5gr 1400 " 60-0	I
"Bihydrechler 2gr 100 " 2-12	G
" " 5gr 100 ,, 5-10	R
,, 10gr 2cc 50 amps. 5-0	E
Pibedes 10ms 100 - 2ss	15
Bihydro 10grs 100 x 2ce	J
, la4. B.D.H. Evans B.W. P.D. 16-8 23-0 22-8 33-8 40-8 10-12 15-0 14-0 5gr 100x loc Cibazol 20's 1-10 250's 13-8	ī
10-12 15-0 14-0 5gr 100x loc	i
Cibazol 20's 1-10 250's 13-8	C
Demex Issuex 25 1-5 100 tab. 3-5 Bayer Atebrin 15 0-10; 300 7-4, 1000 tab. 10-0	-
Baver Atebrie 15 0-10: 300 7-4	M
1000 tab. 10-0	1
Adopter Japan doz 2-4	8
An Oxford Chemistry Book 3-0	8
Artery Forceds each 2-4	1.5
" ., c Needle Holder ,, 3-4	L
Berin l mg 25 tabs 0-8; 100 1-8 Breast Pump 1-8; Bistury 2-0	L
Breast Pump 1-8; Bistury 2-0	M
BWAtronine Sulph 1/100gr 20tabs 0-10	1
BW Digitalin 1/100gr 20 tabe 0-8, Strichnia Hydro 1/60gr 20 tab 0-8	N
" Strichnia Hydre 1/60gr 20 tab 0-8	N
or 1/200 gr 20 tabs 0-10	M
OF 1/200 gr 20 tabs 0-10	N

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BW Nicotinamide 50mgm	Catheter Metal Female 1-8
100 x 1ce 14-0 box	
M&B Leucarsone 4 gr. 500	Cork Screw & Tin Cutter Engl-4
tabe. 12-0 tin	Ear and Nose Forceps 3-8
Chloramphenicol Belgium 12 cap 13-8	Elasto Plast 2 x 5 yds tis 2-0
Dihydrostreptomycin I gm.	Emetin Hydro igr 6x loc PD 6-0
Giaxo Merck Pfizer A. H Rhodia	Emetin Hydro igr 6x lee PD 6-0
1-13 1-10-0 1-14 1-10 1-10	1 gr. 6 x lee 9-2
Strepto with Peniciliin :-	Endo igr 6x lee 2-12
Belgium Rhodia Glaxo Squibb's	Enterovioform20's 2-12; 100's 11-10
2-4 2-6 2-10 2-10	Ephodria Hydro Car tgr 1000 tabs 5-8
Pfizer Combiotic (Penstrep) 3-4	Ethylchloride 100 gm. Ger. 2-4
Procain Penicillin 4 lac:-	Eye Bath Glass each 0-10
Dumex Glaxo Squibb Pfizer	Eye Speculum 7.0
1-0 1-1 1-7 1-14	F.L. Washable 0-5 each
Procain Penicillin 20lac Glaxe 3-13-6	" Groeodyle 0-8,
,, 20 lac Dumer 3-10-6	, Silvertex 2-4 doz
Strepto 5 PAS. Lepetit 3-8	F.L. Durex Pkt. 1-12 Tin 2-0 dos
Penicillin Sodium Crys. G.	Fountain Pen Battery 3.0
2 lac 5 lac 10lac	Fountain Pen Battery 3-0 Glass Pan 0-6; Glass Bods 0-3
Dumex 0-9-6 1-0-3 1-10-6	" Syringe 1 oz 0-8; 2 oz 0-10
Glaxo. 0-10 1-1 1-12-6	4 08 0.19
Sanibb's0-13 1-6 2-7	"Macarbin 50 Micro 6x lee. 5-8
Penicillin Lozenges 20;1-2 50 2-0	"Berin 50mg 10co 3-2 100 mg 4-5
" Skin Ointment 1-5	Glass Funnel 2" 1-4 [bot
Aureomycetin 12 cap. 19-0	" 3" 1-12; 4" 2-8
Terramycetin 8 17-0 16 caps 32-8	Head Mirrors e Cloth Band 13-8
P.D. Chloromycetin 12cap 17-0	Horse Hair 100 Strand box 2-0
,, liquid 60 co 14-0	Hypo Syringe 50ce S.N.
" Camoquin 3 tab. 0-11-6	Jap. 3-14; Italy 9-0; Germ. 8-8
" Abedec drop 15ce 5-12	Record Needle (Perfectum 5-8)
., Liver Ext. 2 USP 10cc 3-12	Record Needle (Perfectum 5-8)  Jap. Germ. Star. D.B.
., ., 5 USP 10cc 7-12	All Glass Needles Luer Mount
Combex 10cc 6-8	All Glass Needles Luer Mount
Quinine Sulph Jap. 35-8 How 53-8 lb.	Jap 2-4;Ger 3-4;DB 5-0; BD 10-8
" ,, Jap. loz 3-0 ,, 4-0 oz.	Hypo Syringe (SN Re. 1 mere)
, Sulphate plain 2gr 100 tabs 2-4	A.G. Jap 2 5 10 20 30cc
" , bgr 100 , 4-4	Saperior 0-7 0-11 0-14 1-12 2-12
,, Bisslph Hew 5gr 1400 ,, 60-0 ,, Bihydrechler 2gr 100 ,, 2-12 ,, 5gr 100 ,, 5-10	Italy 1-0 1-12 2-8 3-8 5-8
"Bihydrochler 2gr 100 ., 2-12	German 0-14 1-1 1-8 2-10 4-12
	Record Ger3-4 4-12 6-8 9-0 13-8
, 15gr 2cc 50 amps. 5-0	Boston 4-12 5-8 7-0 11-12 15-4
., ., 5gr 12 tabs How. 1-0	
Bihydro 10grs 100 x 2ce	Japan , 1-8 2-8 3-4 4-4 7-0
,, Ind. B.D.H. Evans B.W. P.D.	M.Case Jap. 2-4 3-8 4-8 6-12 -
16-8 23-0 22-8 33-8 40-8	Insulin Syringe 5-0
10-12 15-0 14-0 5gr 100x lee	Injection Eng:-
Cibazol 20's 1-10 250's 13-8	
Damex Isonex 25 1-5 100 tab. 3-5	
Bayer Atebrie 15 0-10; 300 7-4	
1000 40 10 0	
Adopter Japan doz 2-4	
An Oxford Chemistry Book 3-0	Strychinine Hydro 12x1ce 1.0
Artery Forceps each 2-4	
c Needle Holder ,, 3-4	
Axistraction Forceps 48-0	3x5 yds 2-0
Berin 1 mg 25 tabs 0-8; 100 1-8	Lumber Puncture Needle 5-8
Breast Pump 1-8; Bistury 2-0	
BWAtropine Sulph 1/100gr 20tabs 0-10	,, Pracquine 500 tabs bet 1-8
BW Digitalin 1/100gr 20 tabe 0-8	M&B Santonine 1 dr. dr. 4-4
" Strichnia Hydro I/60gr 20 tab 0-8	NAB 15's 0-10; 3 0-11; 45 0-13;
" Hyocine Hydrobrom 1/100	Microscopie Glass Slide doz. 0-8
or 1/200 gr 20 tabs 0-10	
Catheter I.R. 0-8 Ger. 1-4	
,, Metal for Male 1-8	

P	LASTIC with handle Free,	
i	Oil Chinopodium 1 os 4.8	
ı	Oint Slab Graduates 4-4	
1	Ointment :-	
1	Acid Borie USA 1 oz 0-4 each	
1	.,	
1	Acriflavin Boot's 2 os 0-5	
1	Atropine , tos 0-12 ,	
1	Dido Colt	
1	Golden Eye Oint. 0-12 ,	
1	Calomel USA 1 oz 0-8 ,, Gentian Violet Jelly 4 oz 0-8 ,, Mergurial 1 oz 0-8	
d		
ı	Sulphanilamide 4 oz 0-9 ,, Santonine Calemei igr 100tabs 6-0 Rulsometer i min 3-4	
İ		
İ	PAS German 100 gm 5-8	
4	7.5 Celcium Ger. 100 gm 8-12 7.5 Celcium Ger. 100 gm 8-12 7.5 Ger 7 igr 100 tabs 3-8 7.5 gr 250 tab 7-8 Potas Chloras 500 tab, bot. 3-8 Potas Chloras 500 tab, bot. 3-8	
î	,,, Ger 7 gr 100 tabs 3-8	
1	Potas Chloras 500 tab. bot. 3-8	
d	Pessary Ring 0-6; Check 0-8	
i		
1	Quinacrine MB 500 tabs Tis 5-14	
1	Resochin tah 10 1-12: 100 14.8	
١	Rubber Gloves '7 or8' 0-12 pair Roche's Beflavit 250 tab bet 1-4	
	Roche's Beflavit 250 tab bet 1.4	
1	" Beflavit lag 50x2ee box 1-12	
1	this role . 500 19-4	
	Sulphagainidine Boots 500 tabs 12-0 ,, thiazole ,, 500 ,, 19-4 Sulphatriad 25 2-2; 100 tab 8-8	
į	Sulphamezathine 3cc 25amp 6-8	
١	., 100 tab 6-14; 500 tab 28-8	
	Sulpharmezathine 3cc 25mp 6-8 "100 tab 6-14; 500 tab 28-8 Suture Needle Eng. 0-4 each Saline App. 300cc 8-0: 500cc 10-8 "Meedle 1-12; NAIL CUTTER USA 1-8 Borum Needle 2" 9-12; 3" 1-0	
	Saline App. 300cc 8-0: 500cc 10-8	
	Manuel Nordle 2" 0 12, 2 " 10	
2	Silk Worm Gut 100 Strands box 1-8	
	Ligatura Hank 1.4	
	Spirit Lamp Class 2ez 1-10;4ez 1-14 " Metal " 2-4; " 2-8 Spatula Bolus 4" 5" 6" 8" 0-14 1-0 1-2 1-4	
	,, ,, Motal ,, 2-4; ,, 3-8	
2	Spatula Bolus 4" 5" 6" 8"	
	0-14 1-0 1-2 1-4 Sterilizer Nickel 6" 13-8; 8" 20-8	
ŀ	Stathescope Ger R B Two 19 6	
•	Test Tube Stand for 12 take 3.0	
	Stethescope Ger B.D. Type 12-8 Test Tube Stand for 12 tube 3-0 ,, Holder NP c Handle 2-4	
)	A. AMBUFERU U-4	
ı	Tangue Depressor 1-4 Folding 2.0	
)	Tourniquet in tin 2-8	
	Vaginal Speculum Folding 9-12 Thermameter Germ 0-15; Jap 0-10 ,, Zoal 2-4; USA 1-4; Eng 1-4	
)	Zoni 2.4: USA 1.4: Fne 1.4	
	, Hicks 3-8; Jap Flat 1-5	
)	TCF. Vit. B Complex 10cc 5-0	
ŝ	7CF. Vit. B Complex 100c 5-0 ,, W. Liver Ext. 100c 3-2	
1000	,, ,, e C & B 1000 4-6	
)		
1	Trasentin 6H 5 x lee 3-12	
,	USA Bandages Brown 3x6yss 0-6	
	white 3x6 vde 0.9	
	First Aid 4x 41 0.4	
-	Triangular 24x48 Ft. 1-0	
ì	Vitamin B1 USA 500 tab. 1-0	
•	", ", 2x1½ yds 0.3 " white 3x6 yds 0.8 ", ", First Aid 4x 4½ ", 0.4 ", Triangular 24x48 Ft, 1.0 Vitamin Bi USA 500 tab. 1.0 ", C Est. 50sg, 1000 tab 16.8	
0	Weight set Dr. & Gr. 0-12	



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